

Masthead Logo

Sci-Tech News

Volume 67 | Issue 3

Article 11

August 2013

Full Issue, Vol. 67, issue 3

Follow this and additional works at: <http://jdc.jefferson.edu/scitechnews>

[Let us know how access to this document benefits you](#)

Recommended Citation

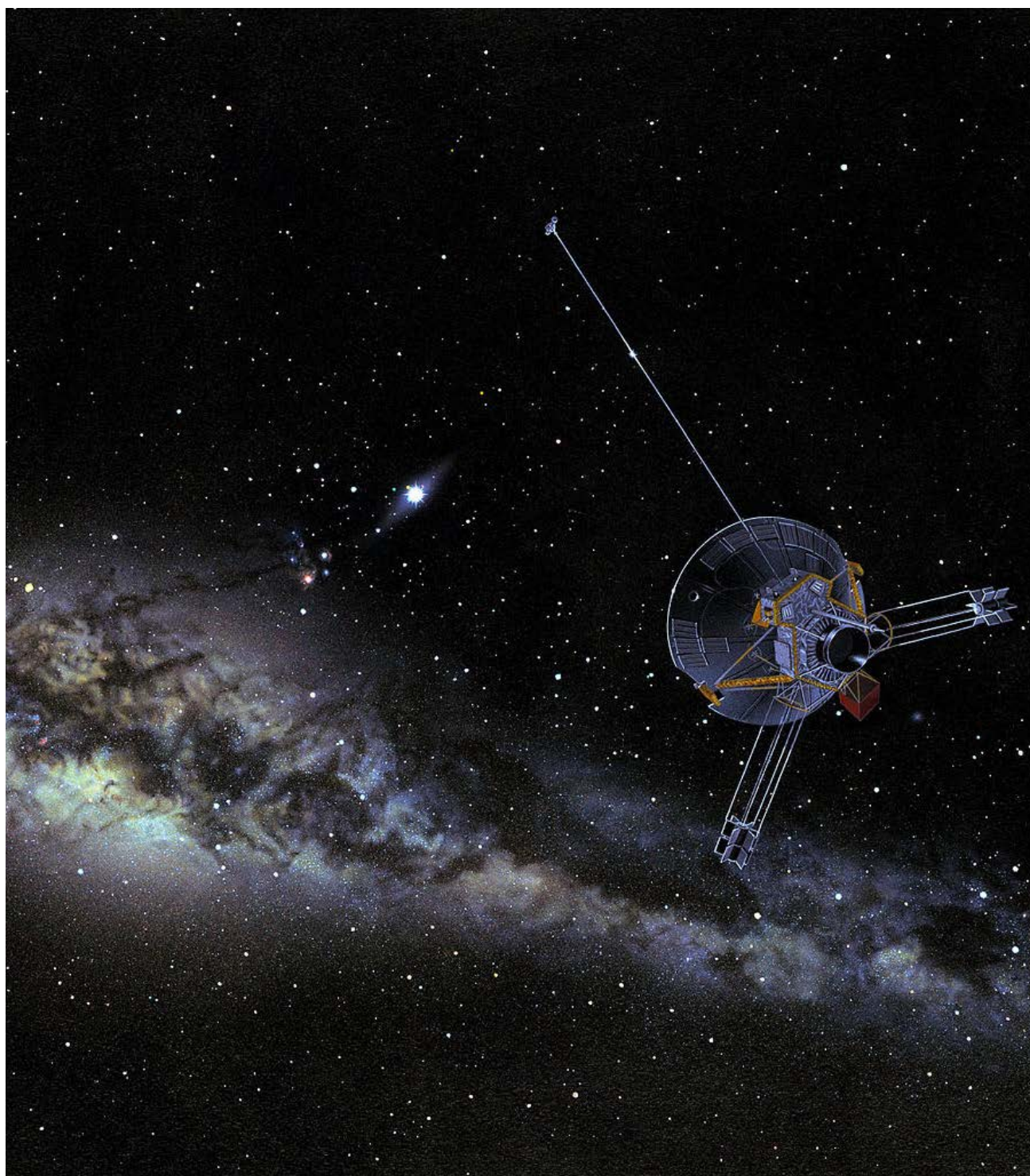
(2013) "Full Issue, Vol. 67, issue 3," *Sci-Tech News*: Vol. 67: Iss. 3, Article 11.

Available at: <http://jdc.jefferson.edu/scitechnews/vol67/iss3/11>

This Article is brought to you for free and open access by the Jefferson Digital Commons. The Jefferson Digital Commons is a service of Thomas Jefferson University's [Center for Teaching and Learning \(CTL\)](#). The Commons is a showcase for Jefferson books and journals, peer-reviewed scholarly publications, unique historical collections from the University archives, and teaching tools. The Jefferson Digital Commons allows researchers and interested readers anywhere in the world to learn about and keep up to date with Jefferson scholarship. This article has been accepted for inclusion in *Sci-Tech News* by an authorized administrator of the Jefferson Digital Commons. For more information, please contact: JeffersonDigitalCommons@jefferson.edu.

SciTech News

The Official Bulletin for the Chemistry, Engineering, and Science-Technology Divisions and the Aerospace Section of the Engineering Division and the Materials Research and Manufacturing Section of the Chemistry Division of the Special Libraries Association



Volume 67, Number 3 (2013)
ISSN 0036-8059

SciTech News



On the Cover



On September 1, 1979, Pioneer 11 came within 13,000 miles of Saturn. The first probe to encounter Saturn, Pioneer served as a test run for the soon arriving Voyager 1 and Voyager 2. In its adventure, Pioneer almost collided with one of Saturn's small moons. Unfortunately, communication with Pioneer 11 was lost on November 30 of 1995 due to power constraints and the large distance the probe had travelled from earth.

About the image:

An artist's view of a Pioneer spacecraft heading into interstellar space. Both Pioneer 10 and 11 are on trajectories that will eventually take them out of our solar system. Credit: NASA Ames Research Center, Feb 23, 1990.

Columns and Reports

From the Editor	3
SciTech News Call for Articles.....	4

Division News

Aerospace Section	
of the Engineering Division	25
Chemistry Division.....	11
Engineering Division	14
Materials Research & Manufacturing Section	
of the Chemistry Division.....	13
Science-Technology Division.....	5

Reviews

Sci-Tech Book News Reviews	26
----------------------------------	----

Index of Advertisers

SPIE	23
------------	----

Copy Deadline

Issue Number 1	Feb 1
Issue Number 2	April 1
Issue Number 3	Aug 1
Issue Number 4	Nov 1

SciTech News

Volume 67, Number 3 (2013)
ISSN 0036-8059

Editor

Abby Bedford
432 Fountain NE #5
Grand Rapids, MI 49503
abby.e.bedford@gmail.com

Chair of the Review Board

Bonnie Osif
Pennsylvania State University
325 Hammond Building
University Park, PA 16802-1403
(814) 865-3697
ba02@psu.edu

Assistant Editor

Jeremy Cusker
103B Carpenter Hall
Cornell University
Ithaca, NY 14850
jpc27@cornell.edu

Business Manager

Nevenka Zdravkovska
University of Maryland
1403J Mathematics Bldg
College Park, MD 20742-7011
(301) 405-9144
Fax: 301-405-9164
nevenka@umd.edu

Department Editors

Sci-Tech Book News Reviews
Selector: Susan Fingerman
smfinfo@verizon.net

Web Reviews

Beyond the Chemistry Web
Bob Buchanan
buchara@auburn.edu

SCITECH NEWS (ISSN 0036-8059) is published quarterly (March, May, September, December) by the Chemistry, Engineering, and the Science-Technology Divisions, the Aerospace Section of the Engineering Division, and the Materials Research and Manufacturing Section of the Chemistry Division of the Special Libraries Association, 132 Hemingway Place, Georgetown, KY, 40324, (859) 539-5810.

Publication Policy: *SciTech News* is the official bulletin of the Chemistry, Engineering, Science-Technology Divisions, the Aerospace Section of the Engineering Division, and the Materials Research and Manufacturing Section of the Chemistry Division of the Special Libraries Association. The contents of articles and editorials are not to be construed as being or representing the official position of the sponsoring divisions.

Disclaimer: Special Libraries Association assumes no responsibility for the statements and opinions advanced by the contributors to the Association's publications. Editorial views do not necessarily represent the official position of the Special Libraries Association. Acceptance of an advertisement does not imply endorsement of the product by the Special Libraries Association.

Manuscripts: The Editor solicits papers of interest to the community of science and technology-oriented special libraries. Manuscripts of articles should be sent via E-mail (Microsoft Word or Plain Text format) to abby.thorne@gmail.com.

Subscriptions: Special Libraries Association members in the Chemistry, Engineering, Science-Technology Divisions, the Aerospace Section of the Engineering Division and the Materials Research and Manufacturing Section of the Chemistry Division automatically receive subscriptions to *SciTech News*. Their annual subscription fee of \$1.00 is paid from their annual dues to the Special Libraries Association.

Offices: *SciTech News*, c/o Editor, Abby Bedford, 432 Fountain NE #5, Grand Rapids, MI 49503, abby.e.bedford@gmail.com. Business Manager, Nevenka Zdravkovska, University of Maryland, 1403J Mathematics Bldg, College Park, MD 20742-7011, (301) 405-9144, nevenka@umd.edu.

From the Editor

Abby Bedford



Another conference has come and gone and a new school year has begun. How time flies! If you, like me, weren't able to attend the conference this year, be sure to read each article in this issue. There are many summaries and other great material from the conference!

As the year progresses, we are anticipating our annual changing of the guard. Now is a great time to think about volunteering for positions within the various divisions and chapters of SLA. We also will have a few vacancies here at SciTech News to fill, so keep an eye out for a call!

Happy fall everyone and enjoy the issue!

***SciTech News* Call for Articles!**

SciTech News is looking for a few good authors!

If you have a research project, a new service in your library, a new instructional method, or other information you'd like to share with your colleagues, please consider writing for *SciTech News*. In addition to the regular articles, we now have a refereed section. Colleagues will review your article and provide feedback. Accepted articles will be published in the new electronic *SciTech News*. This is an excellent venue to get your research and ideas out to a group of interested readers and get that important refereed article for your dossier or annual review.

For additional information, contact Editor Abby Bedford (abby.e.bedford@gmail.com) or Review Board Chair Bonnie Osif (bao2@psu.edu). Articles for the refereed section may be submitted to the Review Board Chair at bao2@psu.edu.

News from the Science-Technology Division

Science-Technology Division Helen Josephine, Chair

The objectives of the Science-Technology Division shall be to draw together those members of the Special Libraries Association having an interest in the role of library and information science as applied to the recording, retrieval and dissemination of knowledge and information in all areas of science and technology, and to promote and improve the communication, dissemination and use of such knowledge for the benefit of libraries and their users.'



SLA San Diego, sunny days, inviting beach, water front location, great hotel pool, fabulous seafood restaurants, interesting nightlife and great vendor receptions--all of that plus informative programs and great vendor networking. If you were there you experienced all of this and more.

The Sci-Tech Division programs started on Saturday with a full-day CE class on Patent Research with Chris Vestal and Maria Kreiser as our instructors. We had 20 attendees for the session, 17 SLA members and 3 non-members. Overall reviews of the event were very positive, with one person commenting, "It was a fantastic program! The best I attended at SLA." Way to go Chris and Maria! Thanks to Proquest for sponsoring the CE session.

Later on Saturday our annual Newcomer's lunch hosted by Sarah Oelker and sponsored by IEEE was held at Buster's Beach House. We were joined by Dr. Susmita Chakraborty winner of the 2013 Bonnie Hilditch International Librarian Award, Maria Cecilia Ingusan-Ayson winner of the 2013 Diane K. Foster International Library Travel Award and Timothy L. Gallati winner of the 2013 S. Kirk Cabeen Student Travel Award. Our annual board meeting was also held late Saturday afternoon with 9 board members and 2 guests attending. Minutes of the meeting are posted on the Sci-Tech division wiki.

The first Sci-Tech program was on Sunday, "Content and Interfaces: What's New," which included an invited panel with representatives from Deep Web Technologies, Elsevier, Microsoft Research, Proquest Dialog, Springer and Thomson Reuters presenting 5 minute updates on the newest features of their products. Over 150 attend this session and based on the success of the program and the format, we are planning for a similar session at the Vancouver Conference focusing on vendor mergers and buy-outs. Thanks to Elsevier and Springer for

their sponsorship of this event and to all of the participants for an informative and lively session.

The annual Sci-Tech breakfast and business meeting was held on Monday morning. Forty members and guests attended the breakfast. We officially awarded the Bonnie Hilditch International Librarian Award to Dr. Susmita Chakraborty and to Mr. Parveen Babbar, the Diane K. Foster International Library Travel Award to Maria Cecilia Ingusan-Ayson, the S. Kirk Cabeen Student Travel Award to Timothy L. Gallati, the Sci-Tech Achievement Award to Joe Kraus and the Impossible Award to Susan Shepherd. Pictures of the award winners are posted on the Sci-Tech Division website. Thanks to all who attended and to our sponsor for this event, IEEE.

Monday was the busiest day of the conference for the Sci-Tech Division. After the breakfast we co-sponsored the very popular, "Next-Generation Sci-Tech Librarians: Helping Institutions and Researchers Increase Their Impact," with Susan Maker, Jason Priem and Elizabeth Brown presenting. The jam-packed room heard informative presentations on research support programs and altmetrics. Sponsors of this program included Elsevier and Taylor and Francis. This was followed by a Spotlight Session, "Big Data: Big Challenges" where an audience of over 200 heard Amy Affelt and Britt Mueller discuss the issues of big data in the corporate setting with David Minor and Dr. Wilfred Li presenting on the research data curation program at UC San Diego. Thanks to ACS Publications, John Wiley and World Scientific for sponsoring this program.

This year Science and Engineering 101 and the All-Sciences Poster Session and Reception were both on Monday afternoon. Mary Frances Lembo and James Manasco reprised their ever popular, Science and Engineering 101 for the San Diego conference covering the

topics of Transportation, Geology and Mining. Over 60 attended this program, which will be holding its 10th anniversary session next year in Vancouver. James and Mary Frances post the slide sets for their presentations to this blog: http://sla-divisions.typepad.com/scitech_101/. Thanks to SAE International for sponsoring Science and Engineering 101 in San Diego. The Biomedical and Life Sciences Division, with the Chem, Eng, Pharma, PAM, FAN and Sci-Tech Divisions, organized the All-Sciences Poster Session and Reception this year. We had 28 posters presented and great food and conversation. The American Institute of Physics and Taylor and Francis sponsored the All-Sciences Poster Session.

Three members of the Sci-Tech Division also had papers selected for the SLA Contributed Papers sessions. On Sunday, Giovanna Badia, presented her paper "Comparing the Indexing of Cited Journals to Identify the Premier Database for a Specific Discipline." On Monday, Linda Galloway presented her paper on "Social Media and Citation Metrics." And on Tuesday, Cindy Elliott and Jim Martin presented their paper on "A New Approach to Needs Assessment and Communication to Connect and Collaborate with Faculty."

Sci-Tech Division programs on Tuesday included a session on "Tips and Tricks of Developing and Using Research Apps, APIs and Widgets" presented by Michael Habib from Elsevier and Anna Burke from Springshare. This early morning program had 40 attendees eager to learn about using and customizing the advanced features of Scopus, Science Direct and LibGuides. The annual Computer Science Roundtable was also held on Tuesday as an open discussion on topics proposed by the audience on the day of the event. The discussion leaders were Ruth Kneale and Helen Josephine and the topics ranged from circulating e-readers, tablets and other devices to data

curation programs. ACM and World Scientific sponsored this event. The Sci-Tech division was also a co-host for the Science of Wine session, organized by the Biomedical and Life Science division this year.

Our final event of the conference was an all day tour on Wednesday. We had 30 SLA members join us for a tour of the Qualcomm Library and the Qualcomm Corporate Museum followed by a short bus ride to UC San Diego for a tour of the Giesel Library, lunch and then a tour of the California Institute for Telecommunications and Information Technology (CALIT2), StarCAVE a five-sided virtual reality (VR) room where scientific models and animations are projected in stereo on 360-degree screens surrounding the viewer, and onto the floor as well. We also had a demonstration of the work of the Center of Interdisciplinary Science for Art, Architecture and Archaeology (CISA3) and the tools used for cultural heritage diagnostics including infrared, x-ray, and geospatial technologies. Special thanks to our tour guides at Qualcomm, Britt Mueller, Sean Flores, Bee Bornheimer, Dolly Goulart, Isabelle Garcia along with staffers Greg Sorini and Vani Inampudi. Mark Better led the Tour of the Qualcomm corporate museum. In the category of, "we couldn't have done it without you," a very special thanks to Susan Shepherd and her colleagues at UC San Diego, Gayatri Singh and Mary Wickline. Our vendor sponsor for this event was IEEE.

Wow, San Diego was fun! Thanks to all of you who participated in our events and a special thanks to those who took the time to fill out the survey to help us plan for the 2014 conference in Vancouver.

Helen Josephine
2013 Chair and Annual Conference Program Planner
Science-Technology Division

Science-Technology Division Member Profile

Submitted by Sara Samuel

Science-Technology Division Member Profile: Helen Josephine

One of our leaders is Helen Josephine, who is currently the Chair of the Sci-Tech Division, and she is also a member of the Annual Conference Advisory Council for next year's SLA Annual Conference in Vancouver. Helen took the time to answer some questions via email to help us get to know her a bit better.

Tell us a little bit about your current position.

I am currently Head of the Terman Engineering Library at Stanford University. As one of four subject librarians in the Terman Library, I am the liaison to the Aeronautics and Astronautics Department, the Electrical Engineering Department and the Management Science and Engineering Department. My liaison duties include developing research guides for departments and classes, consulting with faculty on book, journal and database purchases, offering workshops and in-class presentations on library resources and citation management tools, and answering e-mail and walk-in reference questions. As head of the Terman Engineering Library, I manage a staff of 4 professionals, 2 FTE library assistants and student workers. As a team we develop the service offerings of the library, update the library webpages, topic guides and handouts and propose new technology projects for the Library to the Stanford University Libraries administration.

What do you find most interesting about your work?

The Terman Library is known for its experimentation with technology and we have several current projects. These include a pilot program to lend ChromeBooks to students, our ongoing Kindle and e-reader lending program which we started in 2008, development and maintenance of a "Gadget Bar" with tablet devices for students and faculty to "try out" in the Library, a computer workstation cluster in the library with software for students to use for 3D modeling and rendering, and a strong working relationship with the "maker-spaces" provided by the School of Engineering.

Our challenge in the Terman Library is to



continue to provide the information resources students and faculty require as we move toward more online and digital content. The book stacks in our library house about 10,500 items, however our users have access to over 65,000 scientific and technical books through a variety of e-book vendors and platforms. This can cause some confusion and frustration. For example, students want to know which books they can easily download to their laptop, e-reader or tablet. Our answer is "it depends," followed by a long explanation of the various publisher's platforms and their restrictions. Most students have discovered how to find and download the journal articles they need. We only have 70 journals in print in the library and most of those are not our archival copy. More than 95% of our journals are via online subscription. Rapid access to online articles has required students to develop new research workflows for discovering, archiving, searching and citing articles. The Terman Library provides workshops on choosing citation management tools and in-depth sessions on Mendeley, RefWorks, EndNote and Zotero, the four tools supported by the Stanford University Libraries.

What organizations are you involved in?

To keep up-to-date on new research resources, I use both the network of colleagues at Stanford and within SLA. I am active in the local Silicon Valley Chapter of SLA and have held several leadership positions including President and Program Director. I am currently Chair of the Hospitality Committee. On the international level, I am currently Chair of the Science-Technology Division and was the divi-

sion's program planner for the 2013 San Diego Conference. I am also a member of the SLA 2014 Vancouver Conference, Annual Conference Advisory Council.

In addition to my MLS degree, I also have a Project Management Professional (PMP) certification from the Project Management Institute. I "discovered" project management as a discipline and a skill while working at Intel in the corporate library. As a company, Intel has embraced project management and offers many classes and support groups to help employees get the training and experience required for certification. While a project management certification is not for everyone and some of the details I was required to learn to pass the comprehensive examination I may never use, I do think that the structure and methodology has helped me to manage more complex projects. I attend workshops and local conferences offered by the Silicon Valley Chapter of PMI and they provide me with additional networking opportunities, as well as programs on Agile, Lean Startup and Microsoft Project.

What advice would you give a new member of SLA, a new Librarian, or someone starting out in engineering librarianship?

My advice to those new to the profession or new to working in an engineering library is to

develop your technical and networking skills through professional associations such as SLA. Volunteering for committees and leadership roles in your local chapter or in the division will give you many opportunities to network, learn new skills and try new technologies that you can apply on the job. A science or engineering undergraduate degree is not essential, but it definitely helps when you are called on to interpret a tricky citation or to develop a recommendation for a new library resource. However, if you think of everyday as an adventure and an opportunity to learn new things, you will be successful working in an engineering or science library.

Thank you, Helen, for sharing with us!

Here are some links to some things that Helen mentions:

Terman Engineering Library:

<http://library.stanford.edu/englib>

Silicon Valley Chapter of SLA:

<http://siliconvalley.sla.org/>

Project Management Institute:

<http://www.pmi.org/>

Science-Technology Division Newcomers' Lunch

Submitted by Sarah Oelker, Membership Committee Chair, Science-Technology Division

The annual Newcomers' Lunch is one of my favorite duties as Membership Chair of SLA. Every year at Annual Conference, the Newcomers Lunch is a place for those new to the division to meet other new faces, network with division officers and trade tips for a great conference-going experience. This year was no exception: we met on Saturday June 8, at Buster's Beach House in Seaport Village, near the San Diego Convention Center. This event brings together a different blend of interests and talents every year, but as usual, it was a delight to meet our Division award winners and newcomers, and a grand time was had as we traded tips on everything from conference planning to which entrees to order to how to take the train from San Diego to LA. Special thanks go out to Susan Shepherd for finding us a great location in San Diego for this event, and to George Plosker and IEEE, both for both their sponsorship and for sending George to get us started chatting and making friends, and reminding us why avocados and Arnold Palmers are especially appropriate foods to eat in San Diego. (And he was right, they were great.)



L to R: Susmita Chakraborty, Kathleen Gregory, Nevenka Zdravkovska, Sarah Oelker, George Plosker, Helen Josephine, Tim Gallati, Maria Cecilia Ingusan-Ayson.

Science-Technology Division New Members

Submitted by Sarah Oelker, Membership Committee Chair, Science-Technology Division

The Science-Technology Division welcomes its new members:

Simon Alcock
London
UK

Katie Matticks
Schaumburg, IL
USA

Leslie Arms
El Paso, TX
USA

Claressa Mazzetti
San Francisco, CA
USA

Dorlissa Beyer
Aurora, NE
USA

Christina Mills
Toronto, ON
CANADA

Kathryn Dunn
Federal Way, WA
USA

Sophia Prisco
Vista, CA
USA

Bertram Foster
Henderson, CO
USA

Paul Roemhild
Wilmington, MA
USA

Kathleen Gregory
Denver, CO
USA

David Rose
Mason, OH
USA

Katharine Hall
Montreal, QC
CANADA

Gwen Short
Burbank, OH
USA

Margaret Janz
Southport, IN
USA

R. Paul Skeehan
Brookfield, IL
USA

Sridevi Jetty
Jhansi, Uttar Pradesh
INDIA

Justin Soles
Dollard-des-ormeaux, QC
CANADA

Cait Kortuem
Minneapolis, MN
USA

Sabrina Springer
Derwood, MD
USA

Robyn Krohn
West Valley City, UT
USA

Paul Suliin
Grand Junction, CO
USA

News from the Chemistry Division

Chemistry Division

Susan Makar, Chair

The Chemistry Division is concerned with chemistry and chemical technology, and the economics, educational advances, and information handling of developments in the field of chemistry and related subjects.



It's hard to believe that SLA 2013 has come and gone! Where did the summer go? I am sure many will agree that San Diego was a wonderful conference location with much to see and do after conference hours. I know enjoyed both the conference and this fun city. I was very happy with the informal feedback we received on the DCHE programs for the 2013 conference. Our excellent programs were the results of the efforts on many member volunteers who worked very hard as co-planners, instructors, moderators, and speakers. I owe a very special thanks to my 2013 program co-planner, Luti Salisbury, who was instrumental in planning the well-attended "Science and Technology on the Go" session. Bringing together seven speakers is no small task! Plus, Luti helped with countless other tasks and details to make the DCHE programming a big success. Val Tucci, 2013 DCHE Chair-elect, also assisted with many last minute details and planning ideas. She is currently in the throes of planning for SLA 2014 in Vancouver.

We offer a big thanks to our sponsors, without whom the conference would not be possible. They are valued partners, both at the conference and throughout the year, as we bring the best products and solutions to our customers. Bill Armstrong, Sponsorship Chair, worked with our generous sponsors to make our San Diego conference programming possible. This year's conference was sponsored by: ACS Publications, Association for Computing Machinery (ACM), Elsevier, IHS, Knovel, RSC Publishing, Taylor and Francis Group, Thomson Reuters, and World Scientific Publishing.

As always, the DCHE CE courses were a huge success, thanks to the efforts of Ted Baldwin, our Professional Development Chair, and course instructors Judith Currano, Susan Cardinal, and Dawn French. Ted organized two half-day CE courses this year: Chemistry for the Non-Chemist Librarian, taught by Susan Cardinal and Judith Currano, and Chemical Information Sources, taught by Judith Currano and Dawn French. The only disappointment

for the attendees of these outstanding courses was the shortened course length. Attendees wanted more time, but SLA Conference scheduling logistics prevented us from having the full-day courses that we have had in the past. We are hoping to address this issue at future conferences.

Jason Priem, co-founder of ImpactStory, drew a huge crowd as a speaker at the DCHE sponsored "Next Generation Sci-Tech Librarian" program. It was standing room only! He definitely kept the audience's attention as he walked us through his presentation on "Alt-metrics and Revolutions: New Products, New Metrics, and the New Era of Web-native Scholarship."

This year we combined our Newcomer's Luncheon and DCHE No-Host Dinner into one event – dinner Saturday evening at Lou & Mickey's, a steak and seafood restaurant conveniently located just across from the conference center. I want to thank Mindy Peters, our Membership Chair, for planning this event and inviting our DCHE Newcomers. We had a large crowd, filling two tables. This new format gave newcomers the opportunity to not only meet the DCHE Officers and Board members but also to mingle with other DCHE members. We got mostly positive feedback on combining these two dining events.

This year we also combined the Academic and Corporate Roundtables into one early morning breakfast meeting led by Ben Wagner and Marie Fraties-Block, who selected some very relevant topics for roundtable discussions. Topics included data management, the changing world of document delivery, techie topics, scholarly communications, and outreach to chemists.

Our Mentoring Chair, Denise Callihan, once again organized a conference buddy program for our first-time conference attendees in San

Diego. I was one of the lucky ones to get to know a first-timer as their buddy. I think all participants in this year's buddy program had a great opportunity to learn from one another. At this year's conference we celebrated the accomplishments of two DCHE award winners during our Annual Business Meeting.

Shu Guo is the winner of the 2013 Marion E. Sparks Award for Professional Development. The Sparks Award is presented to a student or new member and is intended to encourage their participation in DCHE activities. Shu is a Science Librarian at the Park Libraries, Central Michigan University. She has been very successful introducing chemical information training into the CMU curriculum for Chemistry majors.

Also at the conference, ACS Publications Library Relations presented **Linda Galloway**, Librarian for Biology, Chemistry, and Forensic Science at Syracuse University, the 2013 ACS Publications Travel Award to SLA. As the award recipient, Linda has generously agreed to collaborate on ongoing ACS Publications Library Outreach in 2013.

Because there are so many volunteers that make a conference like this a success, I know that I have probably missed someone. To all of those that did not get mentioned by name, we are deeply grateful for your time and effort. The conference would not have been a success without the work of so many.

Materials Research & Manufacturing Section New Members

Submitted by Bette Finn, Materials Research & Manufacturing Section

The Materials Research & Manufacturing Section of the Chemistry Division Welcomes Its New Members

LM Information

Attn: Anthony Roche

Western Barn

Manor Farm Business Pk Chipping Warden

NR Banbury, OX171L United Kingdom

Renee Morrissey

Librarian

Alberta Innovates - Technology Futures

Information Management

250 Karl Clark Road

Edmonton, AB T6N1E4 Canada

Sandy Parker

Global Marketing Manager

Phoenix Translations

PO Box 648

Elgin, TX 78621 USA

Mr. Marc Grossblatt

Social Security Administration

11407 A Cronhill Drive Ste A

Owings Mills, MD 21117

Ms. Rebecca Hamburgess

Student, University Of Kentucky

Lib & Info Science

280 East High St # 17

Lexington, KY 40507

News from the Engineering Division

Engineering Division

Penny Sympson, Chair



The objectives of the Engineering Division are to provide an association for those having an interest in library and information science as they apply to engineering and the physical sciences and to promote the use of materials and knowledge for the benefit of libraries and other educational organizations.

Sunny San Diego was a great venue for the 2013 Conference. The Engineering Division's programs were well attended and received. Your 2013 program planner, Betty Edwards, put together a great slate of events. Several Division members volunteered to report on the sessions and their reports are as follows:

Engineering Standards Update (Sunday, June 9th, 1:30-3:00 pm)

Reported by Peter Moon and Bert Saul
The session was very well attended with about 90 attendees. 14 organizations presented with 12 attending in person and 2 sending in their comments for distribution. The 1.5 hour session was chock-full of great information. (Note: Some of the code organizations are beginning to work with selected universities to include some of the standard development process into the school curriculums.)

American National Standards Institute (ANSI) (Leanne Lowry, Senior Marketing Manager)

ANSI facilitates the development of a wide variety of standards and is a standards reseller. Users can create custom subscriptions and a variety of packages are available. For the academic community, ANSI provides a University Outreach Program that is exclusively for ISO standards and it is sponsored by ISO. ANSI is the administrator for the "Standards Boasts Business" effort which is a public awareness campaign about the need & value of voluntary standards.

American Society of Civil Engineering (ASCE) (Gina Lindquist, Manager, Business Operations)

E-books (about 300) and standards (about 65) are now available on their website as part of the ASCE Digital Library. The "710" standard for buildings will be issued shortly into its third edition and made available this fall. A new standard "41" on seismic evaluation and retrofit of existing buildings will be made available in November.

ASCE 41-13 incorporates ASCE 31 and 41 into a single document. There is a new "21" standard which will consolidate 4 mini-standards which will be released in October.

ASME (Michael Rovins, Director of Global Sales & Customer Service)

To begin with, he reviewed the story of the Sultana ^[1] coming back up the Mississippi with the civil war soldiers on board and the subsequent sinking of the boat and many passengers that precipitated the formation of the ASME. Now, ASME is 130 years old. The Boiler & Pressure Vessel Code which ASME is most well-known for, is just one of 600 other codes. The B&PVC will now be issued every other year rather than in 3-year intervals. And, the addendas issued during the intervening two year periods – will not be issued in the one year between editions – starting with the July 2013 issue. Their library of codes is beginning to build an equivalent in the Spanish language. ASME is also creating what are known as "essential package" in a multitude of areas.

ASTM International (John Pace, Vice-President, Publication & Marketing)

There are 12,000 standards and test methods available from ASTM. Reseller channels are important to ASTM. XML and enhanced HTML versions are now available. There is a new taxonomy scheme; and ASTM is exploring new ontologies. There are several new e-learning modules (courses) on concrete; and over 100 videos tied to e-learning. In another month or two, there will be a new front-end portal for ASTM. There were two new journals started last year; and a third new title will be issued next year.

BSI Standards Limited (Alban Smith, Head of Licensing & Partnership)

Development)

There are over 60,000 BSI standards available across a wide range of sectors. Alban reminded attendees that CEN (European Committee for Standardization) focuses on one major deliverable, the European Standard (EN), and does not sell or distribute standards. ENs, and associated documents, can be purchased from the CEN National Members and affiliates. BSI's Eurocodes offering now has enhance workflow via XML and one can search at the sentence level within standards. More BSI product guidance documents will be published soon.

Document Center Inc. (Claudia Bach, President)

The Document Center is your expert for delivering needed standards and has a notification service that helps customers keep their standards collections up-to-date.

FileOpen Systems (Sanford Bingham, President & CEO)

FileOpen (software) was founded in 1997. Until recently, the FileOpen DRM plug-in worked in concert with only Adobe Reader. However, as other PDF readers from Nuance, Nitro, & Bluebeam have become more prominent FileOpen has enhanced their products to handle a wider range of readers. Their two main products are FileOpen RightsManager and FileOpen RightsServer. Flash is another prominent viewer and FileOpen is developing a HTML5 version.

IHS (Steve Noth, Senior Director, Product Management)

IHS is a full-service standards provider for the last 40 years. IHS is used by over half a million users. IHS Standards Expert, which allows users to search and manage standards from over 370 SDOs, has several enhanced features. One can filter by language or filter for the newest version of a standard, which includes a time-frame of what standards were issued/released in the last 24 hours. A given administrator for a user organization can purchase standards and forward them to specific users and still be within copyright compliance, now. There are new tools for "change management" – red-line

editions. Standards are now available by extension for I-Pads and I-Phones. USGBC LEED standards are now available through them. IHS also has call centers in the UK and Malaysia, as well as the one in the USA. Steve noted that they acquired three companies in the past year: GlobalSpec (product information, industry news and trends); CyberRegs portfolio for North America to the state and province level; Goldfire (semantic tool soon to be included in the IHS Standards Expert.)

Institute of Electrical and Electronics Engineering (IEEE) (Angela Trilli)

The Institute is strong in the powergen area. There are now 2,000 standards available in the IEEE *Xplore* Digital Library. There is a new edition of IEEE color books (the rainbow series). There will be a forthcoming standard "1801" on health informatics. The IEEE Smart Grid Web portal provides a single place where users can explore and understand all the different and particular aspects of the evolution of the smart grid. IHS also makes their standards available.

MADCAD.com (Erdem Dedevas, Vice President, Sales and Operations)

MADCAD is a cloud-based service that includes both codes and standards converted into HTML. They have reworked their store so that it functions like their existing eLibrary. There is better filtering & content grouping and facets are now available. They started with US Model Building Codes and Standards and now include amendments, errata, etc. as appropriate. They are working with Fiatch on the U.S. Local Codes in the Cloud Project with an initial goal of covering 5,000 state by state jurisdictions in 24 months. USGBC LEED-Standards are now available, as are a range of Architectural Graphic Standards (more than 3000 architectural details) from Wiley.

SA Group (Patti Ensor, Manager, Commercial Alliances)

The CSA Group has 3,000 standards available. There is a Cleveland Office as well as the more obvious Toronto Office. CSA works closely with resellers Information Handling Service (IHS) & Techstreet. In the United States the focus

is more on gas manufacturing; on the Canadian side it is more on the electrical area. The "CSA Group" is a new name started in the last year; and there is one, new website replacing multiple websites! CSA Group is working with Germany, and they are also focused on the Asian area. "Red-line documents" will be a focus in the near term. New products include: USB electrician's practice & guide for about \$99.00 and a gas technician project. CSA Group is attempting to expand their training – now working on an e-learning version.

SAI-Global (Susan Morley reported as the representative was absent)
They are working to ensure equivalencies, previously provided through ILI Infobase are carried through in the new i2i Platform. As of 28 June, 2013, SAI Global's Information Services Division in America is moving to a new custom built office in Paramus, NJ

Standards Technology Group, Inc.
(David Walsh, President. Susan Morley reported as Mr. Walsh was absent.)
They have an ISO-Central Platform that includes more than 19,000 ISO standards. The online library will be "Your Online Library."

Thomson Reuters (Todd Fegan, Vice President, Techstreet Operations)
Due to the merging of two historical giants, this organization dates back to 1799! Techstreet is the new kid on this block. And, there is a new techstreet.com launched earlier this year – April 6th. This platform will be offering e-books as they come available. There is a new look and feel for the new search engine, and the search results will display better; and there is a more streamlined checkout process. DRM (Digital Rights Management) is now locked to the user instead of the machine and it is now easier to purchase and assign multi-user PDFs. There is a combined Print & PDF purchase option. The search engine and the subsequent display are now designed to allow the searcher to add their own notes! On the content side, they are adding materials from the Petroleum Institute as well as the Aluminum Association. There

are 51,000 items in their collection that are red-lined items. MarkMonitor, which focuses on online brand protection, was acquired.

Project Management Certification - What's in It for You? (Sunday, June 9th, 3:30-5:00 pm)

Speakers: Helen Josephine (Stanford University Libraries), Peter Spain (Teledyne RD Instruments), Chris Diaz (Sharp Information Services)

Reported by Giovanna Badia

The audience was introduced to project management certification from the perspectives of a librarian, scientist, and employer. All three speakers have project management certification and altogether discussed the steps involved in obtaining certification (see <http://www.pmi.org/> for more details) and its value (i.e., to communicate and to manage the expectations of stakeholders more effectively, to better understand team dynamics, to improve confidence in all aspects of managing a project, etc.). The speakers made a convincing case that project management certification can help information professionals in their daily working lives, whether they are a member of the team or leading it, since learning effective communication and management skills are major parts of the process. The speakers' presentation slides are available on the [SLA 2013 Online Conference Planner website](#).

Reported by Dorothy May

The speakers coordinated their contributions to the session to provide detailed information on the benefits of project management (PM) within the library, healthcare, and technology development fields. Individuals with PM certifications and experience speak a common professional language and have a detailed understanding of management theory. They have knowledge of model best practices for serving stakeholders and can help improve teamwork and communication by improving morale and efficiency through project planning. Talented PM's understand how to maintain balance between project characteristics such as schedule, budget, resources, risk,

and scope. Project planning skills of a typical PM include strategic preplanning (or premortems) conducted before projects are initiated, a structured understanding of the needs of internal stakeholders, and the ability to turn both unforeseen challenges and opportunities into positive outcomes.

The session presenters focused on the Project Management Professional (PMP) and Certified Associate in Project Management (CAPM) certifications administered by the Project Management Institute (PMI). Both certifications are obtained through the successful completion of examinations administered by the PMI. The CAPM is a entry-level certification for project practitioners who have less than 4,500 hours of working experience. The certification is suitable for project practitioners who wish to improve their ability to manage large projects, individuals who are new to project management, career changers, and subject matter experts who are expected to coordinate with project teams. CAPM applicants must have a secondary (high school) degree and either 23 hours of project management or 1,500 hours of project experience prior to sitting for the certifying exam. The CAPM is a 5 year certification that may be maintained through reexamination.

While the CAPM is intended to be an entry-level certification for project management, the PMP certification is intended for individuals with significant project experience. To become a candidate for the PMP certification, individuals must possess a four-year bachelor's degree and three years of project management experience, including 4,500 hours of experience leading and directing projects. Candidates must also complete 35 hours of project management education. Individuals who apply to take the PMP examination must sit for the exam within one year of their acceptance. The PMP examination is a 4 hour examination that consists of 200 questions and is scored on a pass or fail basis. Participants must score at least an 82% to obtain a passing score. The PMP certification must be renewed every 3 years; renewal requires 60 hours of continuing education classes. Both the CAPM and PMP certifications are

well-known internationally, and enable individuals to show added organizational value to both current and potential employers.

Systems Thinking in Libraries (Sunday, June 9th, 3:30-5:00 pm)

Speakers: Sara Thompson (Jet Propulsion Laboratory) and Lorri Zipperer (ZPM)

Reported by Beth Thomsett-Scott

This session provided an overview of systems thinking and its relevance to libraries. In sum, systems thinking involves looking at issues from a big picture view and seeking patterns to see who needs to be involved in finding solutions, where the problems are occurring, and why certain situations reoccur. This method is primarily used when complex problems persist or when solutions fail. Using a team approach through including all relevant parties, systems thinking strives to provide a shared vision for a solution that not only solves the issue but also has the ability to withstand change fatigue and allows for regular improvement.

Additional resources are available at:

<http://sla2013.sched.org/event/4f27908fd512ac9affb52ba437f369#.UciUmPm6t2A>

<https://sites.google.com/site/saratifr/systems-thinking-for-libraries>

<http://dbiosla.org/searchresults.html?q=zipperer>

Race To The Patent Office: The Impact Of The America Invents Act (Monday, June 10th, 8:00 - 9:30 am)

Speakers: Denise Chochrek (Frito Lay), Janet Gongola (U.S. Patent and Trademark Office), and James Hagler (Qualcomm, Inc.)

Reported by Sara Davis

The first speaker was Denise Chochrek. From her perspective, patents were originally driven by the Act's change from first to file to first to invent. She discussed how the basic research for patents has not changed much but that there is a drive now to get the patent filed as soon as possible rather than take as long as possible before filing.

Janet Gongola from the US Patent & Trademark Office. She spoke more

about the actual Act itself and how it has affected the USPTO. The Act is to bring greater transparency to the patenting process as well as modernizing the process. There are 21 provisions in the Act. The first wave of provisions has already taken place, the second wave will happen 1 year after the first and the 3rd wave happening 18 months after that. There is now a prioritized exam and the period of time needed to determine if the patent is to become a prioritized patent is 2 months. After that decision, then it is 6 months until the final disposition of the patent.

Those with a business interest in the patent or the assignee can apply for the patent. As well as the pre-issuance submission, which this author did not understand well enough to include in this report, my apologies. All of this raises a substantial new question of patentability and provides for administrative trials where a 3rd party challenges the patent. The Act now favors the first inventor to file, regardless of the date of invention. This Act was put into place to harmonize with the rest of the world.

Janet reported that satellite offices of the USPTO have been established although sequestration has affected them. The USPTO is self-supported by fees and sequestration has forced them to reduce travel, postpone IT projects and reduce the hiring of more examiners.

James Hagler, from Qualcomm, Inc. stated that the Act gives those who seek for patents a certainty that they've not had in the process before. Everyone wants to have a good quality patent and the Act helps that process along. He also noted that the Patent office will have to work under the "first to file" AND the "first to invent" systems for the next 20 years in order to deal with all that is currently in the system. Much of the focus of patents right now is focusing on the March 16th, 2013 date which tells you under which system your patent will be dealt with.

The patent attorneys from Qualcomm have become professional annoyers to bug the scientist s & engineers about their patents.

Lightning Talks (Tuesday, June 11th, 2:00-3:30 pm)

Reported by Beth Thomsett-Scott

Each speaker gave a five-minute presentation highlighting unique services, tools, collaborations, partnerships, marketing initiatives or other efficiencies which they've successfully implemented in their organizations.

Mary Strife (West Virginia University): *Strategies to Keep Your Sanity when the Project is out of your Control*. Mary provides gems for handling renovation projects. She emphasizes never turn down money – grab it!; make sure everyone you need is in the room/ discussion; plan thoroughly; be assertive – remember that you are the advocate for your users; maintain awareness of campus issues so you can prepare for anything that affects your library; ask questions; collaboration and communication are key; document everything; and maintain an e-mail trail.

Jonathan Kennedy (Harvard University): *Culture Clash in BiblioTECHA*. Jonathan, a software engineer, recounted the success of a library-informatics collaboration; using natural language processing to automatically index books for discovery. The project came about as a result of a casual conversation, which doesn't happen enough between librarians and IT. Jonathan noted that software/ IT folks share a number of values with librarians, including privacy, copyright, search systems, and findability of information. He advocates that librarians should seek relationships with their IT peers that can lead to new opportunities and collaborations.

Isabelle Garcia (Qualcomm): *Reach Them, Keep Them: Training and Outreach Strategies in a Corporate Setting*. Traditional training has taken online and F2F forms. In an effort to expand the options, Isabelle developed 3-5 minute

videos on very specific topics. Users can log in via IP or password and view one or more selected videos. The focus on particular topics, rather than attempting to provide an overall instruction, has been well-received. Outreach strategies attempt to change user attitudes and behaviors. As with many of us, teaching patrons that there is more to research than the open web is a challenge. Qualcomm librarians have implemented digital signage in areas where patrons gather, such as the cafeteria, sent targeted e-mails to key stakeholders and advocates relaying the value of library resources especially as they relate to current projects, and strive to have membership on committees.

Karen Robertson (Boeing): *Combining Forces to Enhance Support for Employee Development*. This speaker presented results from a project working with the corporate learning organization to integrate informal learning resources (online books, videos) into the Boeing environment. The project assisted the learning organization to maximize the value of its purchase, helped the library fill a need in their collection, provided recognition of the expertise of librarians, and built a corporate advocate for the library.

Kim Feltham and Sarah Gustafson (Klohn Crippen Berger Ltd.): *How to Win Friends of the Library and Influence Engineers: Marketing for a Corporate Technical Library*. Using an innovative example of an elevator speech and a scenario-based presentation, the speakers affirmed the importance of being ready to promote the library's resources and services and taking every opportunity to mingle/network with patrons. The take away jewel is that internal corporate marketing involves every possible kind of networking at every opportunity.

Ethel Salonen (Mitre): *We Have a Seat at the Table!: The Value of the Embedded Information Professional Model in Changing Corporate Strategy*. First jewel is to start embedding as early as possible. The analyst team developed an environmental scan template to provide in document the existing environment and

landscape for each MITRE sponsor. This document allowed each of our centers and Information Services to gain a better understanding of our sponsor's issues. By embedding early in departments and committees, Information Services was able to quickly develop the needed environmental scanning process to meet the information needs of the new corporate strategy.

Betty Edwards (Draper Lab): *Proving Value: Easily Getting "Know-Your Socks Off" ROI Statements from Your Clients*. When the organization mandated a cost cutting activity, the library developed a brief survey and queried clients to provide details of how library research impacted key Lab initiatives. Among the questions asked were: What did you do with the information?; Did it help solve a problem?; and How did the information influence you to make a business decision as well as a rough estimate of the value of that decision?. Although the librarian initially asked to meet face to face, most clients responded to the survey via e-mail, providing extensive positive comments about monetary value. One of the benefits of this was that it saved the librarian time in interviewing and transcribing, but more importantly, the comments were in the client's own words/tones. One of the most telling narratives was a statement regarding time saved in avoiding dead end pursuits. All pertinent remarks were compiled and distributed to upper management, raising library visibility in the eyes of those who control the purse strings.

Susan Morley (CSA Group): *The ABCs of CBT: 24/7/365 Help for Geographically Diverse Users*. Seventy-five percent of this speaker's patrons are remote users. Using Camtasia, the librarian developed short tutorials. As a result of the 24/7 access of these online tutorials, the use of information resources has increased while requests for assistance on their use have decreased.

Dee Magnoni (Olin College): *Going High Touch: Materials Samples and Hand Tools Collections for Engineers*. After noticing that engineering students preferred

tangible items, the library began collection materials samples and hand tools from donations. Using unneeded periodical shelving, the library now displays these items and provides tagging options to allow students to note when, why, and how the item was used.

Karen Vagts (Tufts University): *Feeding the Engineering Handbook Pipeline: A Web Publishing (ad)venture with Electrical Engineering Students*. In support of the ECE Senior Capstone class, the engineering librarian proposed a course assignment that would focus on research and communications. Each student contributed a chapter to an ECE handbook based on their capstone project as well as on library research. Six tutors assisted the students with the writing. Although the students initially experienced difficulty with the research and writing, and understanding the project's purpose, they eventually recognized its value as they improved their skills and produced a portfolio piece.

Daureen Nesdill (University of Utah): *Crowdfunding a TRAIL project*. Although crowdfunding was a new idea, the speaker was able to convince the TRAIL Steering Committee that raising the funds to have a large quantity of microfiche digitized using crowdfunding was doable. This segment indicated the importance of thinking "outside the box" when looking for funding for vital projects.

Julie Williams (Genzyme): *Brave New World: Finding Opportunities When Your World is Changing*. When the competitive intelligence group was absorbed into the business group, the library lost employees and resources. With an emphasis on prioritization and delegation, the library was able to still meet the needs of the researchers.

Susan Fingerman (American Public University System): *Being Virtual: A University Alternative to Textbooks*. The organization provides free textbooks to all undergraduates. With increasing costs and reduced returns, there was a need to find an alternative. After discussion, course guides were determined to be

a good substitute to enhance quality, ensure currency, and also to reduce costs. Using LibGuides as the backbone, librarians developed course guides for each class with input from the faculty. Guides included free and licensed resources, as well as professor notes and reserve readings. Due to the success of the guides, the library is viewed as having incredible value to the organization, APUS has saved millions of dollars, and librarians had the opportunity to stretch their skills.

Lastly, we thank our generous Sponsors which allow us to recognize outstanding Division members, provide travel stipends to the Annual Conference and offer free or reduced cost Conference events. The list of Sponsors and the award or program they supported this year is provided below. With shrinking budgets and competing requests for funds, it is important that we let them know how much they are appreciated. Sponsors are selective when choosing programs to fund and we are honored that they chose Engineering Division events.

Sponsor	Award or Program Sponsored
IEEE	Systems Thinking In Libraries Engineering Division Business Meeting and Luncheon Aerospace Section Meeting and Breakfast Continuing Education Travel Stipend
IHS	Standards Update Engineering Librarian of the Year Award
ACM	Systems Thinking In Libraries Race to the Patent Office Engineering Division Business Meeting and Luncheon
AIAA	Aerospace Section Meeting and Breakfast
ASME	Engineering Division Business Meeting and Luncheon
McGraw-Hill Professional	Engineering Division Business Meeting and Luncheon
Momentum Press	SLA Annual Conference Grant
Techstreet	Standards Update Engineering Division Business Meeting and Luncheon
SPIE	Library Student Travel Stipend
ASCE	Standards Update
ASTM	Standards Update
IET/Inspec	Race to the Patent Office
Knovel	Systems Thinking In Libraries
Springer	Race to the Patent Office
Dialog	Race to the Patent Office
Elsevier	Engineering Division Business Meeting and Luncheon
Morgan & Claypool	Engineering Division Business Meeting and Luncheon
Basch	Engineering Division Business Meeting and Luncheon

Engineering Division Awards

2013 Engineering Division Awards

The Engineering Division was pleased to present the following awards during the Engineering Division Luncheon & Business Meeting, held Monday June 10th in San Diego, CA.

Susan Morley is the recipient the of the 2013 SLA Engineering Librarian of the Year Award. This \$1500 award sponsored by I.H.S., highlights the accomplishments and contributions of SLA Engineering Division members to the engineering librarian profession.

Susan Morley, Manager, Information & Knowledge Management at CSA Group is a Solo Librarian whose responsibilities include both information & knowledge management. Susan has worked at CSA Group for 34 years, managing the Information Centre since 1992, the Communities of Practice (CoP) since 2006 and as a solo librarian for the past 4 years. The range a solo librarian covers is a wide and varied one, providing a level of service commensurate with the organization. There are the usual responsibilities of collection development, reference & consultation services and user instruction, but, as a bit of techie – Susan was CSA's first webmaster in 1996 – she has changed a single location collection, used by approximately 100 locally based Head Office staff to one that is accessed by over 930 users from around the world.

Susan is an active participant in CSA Group's award winning staff training program – Certifier University. Over the past couple of years she has augmented her live presentations by providing Computer Based Training (CBT) instructional presentations on the Information Centre's resources. The CBTs are available 24/7 to all CSA Group staff, have been incorporated into the corporate Learning Management System (LMS), enabling our geographically diverse staff equal access to these instructional resources.

Throughout her career at CSA Group Susan has introduced several innovations. Susan received OALT-ABO's 2005 Award for Innovation for introducing the online "Library" catalogue (InMagic DB/Textworks) which provided staff with their first online experience, enabling access to documents previously only available in print format. The "Library" catalogue



Susan Morley, Kevin Hearn - I H S

has evolved - enabling user's access to a wider range of electronic resources and finding aides. In 2004 online access to standards was made possible using a 3rd party product (IHS' WWW Specs & Standards). This early collection of about 1000 standards, for approximately 100 Toronto staff has grown to 250,000 standards used by 930+ staff in offices across Canada, USA & around the world, realizing a significant return on CSA's financial investment.

Another first occurred in 2006 when Susan helped establish the Communities of Practice [CoP], a key component of CSA Group's Knowledge Management endeavours. Using a pre-wiki 'home made' technical solution, the CoP provides CSA Group's highly skilled technical staff with an opportunity to "share what they know", with staff around the world.

Susan mentors students from University of Toronto FiS and Seneca College Library & Information Technician Diploma Programs as Practicum and Field Placement host. She admits to finding the placements a learning experience, as the students often bring fresh ideas which have a lasting impact.

Susan has presented at SLA, CLA, OALT-ABO and OLA conferences, as well as local chapter SLA and CASLIS meetings. A Special Libraries Association member since 2005, and active member of SLA Toronto West, she was previously a member of Canadian Association of

Engineering Division Awards

Special Libraries and Information Services [CASLIS] and past President of the Ontario Association of Library Technicians / Association des bibliotechniciens de l'Ontario (OALT-ABO). Previously SLA Engineering Division 2012 Standards Chair, Susan continues in this role for 2013, as well as Program Lead for Standards Update 2013. Susan was featured in the April 2013 edition of SLA Solo Division's Flying Solo Blog "20 Questions, Get to Know a Solo"

Originally a graduate (1978) of Sheridan College Library Information Techniques program, Susan has since completed studies in Information Technology (1991), plus continuing education on a range of topics: Business Administration, Competitive Intelligence, Knowledge Management and Project Management with Click U, York and Toronto universities.

In her spare time she enjoys choral music, church history, gardening, genealogy, photography, and continues to employ her webmaster skills for her local garden society

i Canadian Standards Association, CSA International, etc. <http://www.csagroup.org>

ii The Canadian Society for Training and Development (CSTD) Silver Award Winner <http://www.cstd.ca/?page=2012AwardWinners>

iii www.nbpcc.ca

iv <http://www.gardenontario.org/site.php/ch-ing>

Jenny Wong-Welch is the recipient of the of the SPIE Digital Library Student Travel Stipend Award. SPIE Digital Library sponsors this \$1200 travel stipend award for Engineering Division library school student members attending the annual Special Libraries Association conference.

My father, an electrical engineer, is the most influential person in my life; as such he has passed on his love for the engineering profession to me. After finishing my undergraduate degree in Mathematics and Economics from UC-San Diego, I found that engineering librarianship was an excellent way to get involved with the engineering profession. Upon acceptance to library school, I was very fortunate to receive an assistantship at the Grainger Engineering Library Information Center at the Illinois Campus. The Grainger Engineering Library Information Center is not only one of the largest engineering libraries in the nation; it also serves the academic, research community of the highly ranked Illinois College of Engineering.

This amazing opportunity has taught me the fundamentals of engineering librarianship. I have learned the in-depth assortment of engineering resources to assist students and faculty with their studies and research. In addition, my work has enforced my belief that the education of engineering undergraduates is unique. While at UC-San Diego, I saw that my friends studying engineering were having a distinctive educational experience. Their program had a more strenuous course load with a focus on employment after school. At Grainger, I have focused understanding how the library can contribute to the engineering education system. For instance, I am working on building Grainger's social media presence to communicate with the Illinois undergraduate engineering population and identify their information needs. My assistantship experience has only increased my love for engineering librarianship. I truly hope to propose a career in engineering librarianship. I want to help train the next generation of engineers to further the thriving technology industry. -- Jenny Wong-Welch



Jenny Wong-Welch,
Eric Pepper
- SPIE Digital
Library

SPIE Digital Library

SPIDigitalLibrary.org

*The world's largest collection
of optics & photonics research*

For more information visit SDLinfo.org

SPIE®



“The SPIE Digital Library gives access to over 50 years of the highest quality applied optics and photonics research; a valuable addition to any science and technology collection.”

– **Randy Reichardt**, Librarian,
University of Alberta

NEW
40,000 papers
added back to
Vol. 1 (1962)



Astronomy



Biomedical
Optics



Optoelectronics &
Communications



Defense
& Security



Energy



Lasers



Nano/Micro
Technologies



Sensors

Engineering Division Awards

Laura Palumbo is the recipient of the Momentum Press SLA Annual Conference Grant. This \$1,500 grant to be used toward payment of expenses incurred while attending the 2013 SLA Annual Conference in San Diego.

Laura Palumbo is a recent graduate of the MLIS program at Rutgers University, where she is employed as a Chemistry & Physics Librarian at the Library of Science and Medicine. She has a BS in Agricultural Engineering from Rutgers, and is also a licensed professional civil engineer with over ten years of engineering experience. She lives in Hunterdon County, New Jersey, with her husband, two children, and two dogs.



Laura Palumbo, Adam Chesler - Momentum Press

News from the Aerospace Section

Aerospace Section

Mary Strife, Chair



The Aerospace Section of the Engineering Division encourages communication and cooperation among information professionals concerned with aerospace, aeronautical and related technologies. In addition, it fosters dialog with entities such as NASA, the AIAA and other important sources of technical data and bibliographical services.

The Aerospace Section Breakfast was well-attended and quite informative. Our incoming chair, Edna Paulson, let a discussion about the NASA Technical Report Server Service (NTRS) which was taken down for a time and came back with almost 300,000 fewer documents. The missing reports need to go through reclassification to determine if they can be released. Edna will provide new information as it is available.

I am looking for a chair-elect for next year. The Engineering Division and Aerospace Section provide ways to give service to the profession and make a difference in the association. Please email me at mary.strife@mail.wvu.edu if you wish to stand for the position.

Mary Strife, Chair
mary.strife@mail.wvu.edu

Sci-Tech Book News Reviews Susan Fingerman, Selector



The following section consists of book reviews selected from *Reference and Research Book News*, reprinted with the permission of Book News Inc. This review journal is published six times a year, each issue reviewing thousands of new titles in all disciplines. For a sample issue and subscription information, contact Book News Inc at booknews@booknews.com or (503)281-9230.

HYDROLOGY, OCEANOGRAPHY

GB400 9781439872000

Mathematical morphology in geomorphology and GISci.

Daya, B. S. Sagar.

CRC Press, ©2013 516 p. \$99.95

The vast data on terrestrial phenomena at spatial and temporal intervals now available in various formats is posing problems for the informatics of earth and environmental sciences, says Sagar (systems science and informatics, Indian Statistical Institute, Bangalore). He shows how mathematical morphology could be used to deal with the quantitative morphologic and scaling analyses of terrestrial phenomena and processes. After introducing mathematical morphology as an advanced spatial statistical tool that is popular in image processing and analysis, he discusses such topics as feature extraction, morphological shape decompositions, directional spatial relationship, and spatial interpolations.

ANTHROPOLOGY

GN347 9781598744897

Participatory visual and digital methods.

Gubrium, Aline and Krista Harper. (Developing qualitative inquiry; 10)

Left Coast Press, Inc., ©2013 227 p. \$34.95 (pa)

The authors (both of the U. of Massachusetts) write that new methodologies "such as digital storytelling and participatory digital archiving, are changing the ways that social scientists conduct research are opening up new possibilities for participatory approaches that appeal to diverse audiences and reposition participants as co-producers of knowledge and potentially as co-researchers," particularly in their own fields of public health and applied anthropology. In this volume, they introduce anthropologists and other social researchers

to participatory visual and digital methods of qualitative inquiry that afford the "subject," "community member," and/or "field site" "greater narrative latitude when it comes to ethnographic knowledge production and a larger role in determining why and how research outcomes are produced and received by lay and academic audiences alike." They discuss these methodologies through the presentation of case studies that demonstrate the work of prominent practitioners in the field. Chapters are included on basic theory and practice; digital research ethics; photovoice research; participatory film and videomaking; digital storytelling; participatory geographic information systems; participatory digital archives and exhibition as research; and opening up data analysis, writing, and research products.

SOCIAL SCIENCES (GENERAL), STATISTICS

H62 9781452258041

Collecting and interpreting qualitative materials, 4th ed.

Title main entry. Ed. by Normal K. Denzin and Yvonna S. Lincoln.

Sage , ©2013 630 p. \$60.00 (pa)

When the *Handbook of Qualitative Research* was published in 1994, it proved so popular that by the 1998 second edition, it had grown into a three-volume set, which had been almost completely rewritten for this fourth edition. The other two volumes cover the landscape, and theories and issues of qualitative research. This one introduces basic methods of gathering, analyzing, and interpreting qualitative empirical materials. The topics include oral history, performative autoethnography: critical embodiments and possibilities, reflections on interpretive adequacy in qualitative research, analysis and representation across the continuum, and strategies for composition and evaluation.

ECONOMICS

HC79 9781466640627

Information systems and technology for organizations in a networked society.

Title main entry. Ed. by Tomayess Issa, Pedro Isaías and Piet Kommers. (Advances in business information systems and analytics)

Business Science Reference, ©2013 406 p. \$185.00

Issa (information systems, Curtin U., Australia), Isaías, and Kommers compile 18 articles on information systems and technology for organizations by business, computer science, informatics, medicine, and other professionals from Europe, North America, Australia, Brazil, and Japan. They discuss aspects of users and technology, including the participation of children in the information society, technology and the elderly, the use of Living Labs, strategies for analyzing digital texts, and creating and analyzing a social network built from clips of online news; learning aspects, including the role of the academic community in the network society, improving participation of cybernetic organizations through participatory action research, applying problem-based learning to e-learning courses in computing using screencasting, and teaching basic software engineering to high school students; technology-enhanced teaching and learning in business marketing courses; and the characteristics of firms most prone to mobile selling. Subsequent sections cover e-governance, with discussion of the factors involved in evaluating the public value of e-government, the effects of e-government readiness on business aspects like corruption and new enterprises, and municipalities' electronic services for citizens, and e-health, including educational resources for medical education, the adoption of new e-health applications, the effects of a home-based heart monitoring device on innovation in healthcare delivery, and the use of radiofrequency identification in medicine.

PRODUCTION, INDUSTRY, LABOR

HD9502 9780857933683

Handbook on energy and climate change.

Title main entry. Ed. by Roger Fouquet.

Edward Elgar Publishing, ©2013 738 p. \$295.00

Fouquet (climate change and the environment, London School of Economics, UK) supplies

students, academics, and policy makers with a 32-chapter handbook on the economics of energy and climate change. Economics, environment, energy, business, and other specialists from Europe, the US, and Canada address fossil fuel markets, including global oil production and prices, natural gas markets and their role in the global primary energy mix, the implications of an OPEC-style natural gas cartel, and the increased world demand for coal, followed by electricity markets, with discussion of the US electricity grid, the drivers of past research and development in energy storage and grid management, and factors promoting electric vehicle use. They consider energy policy, including identifying macro-level improvements in energy efficiency and policies promoting the development of renewable energy technologies and sources, climate agreements, international support and regional agreements, the Kyoto Protocol, and the conditions needed for an international climate regime. They also focus on carbon mitigation policies, such as financing projects in developing countries, taxes, state-contingent pricing mechanisms for carbon dioxide emissions, energy consumption and emissions in buildings, the econometric analysis of climate policies, tradable permits markets, and the European Union carbon dioxide emissions trading scheme; low-carbon behavior, including consumption and habits, decision making, the moral dimensions of polluting behavior, the need for a decentralized governance structure, and the continuing policy stalemate related to climate change; and low-carbon economics growth, with discussion of the relationship between economic growth and environmental limits, the possibility of a low-carbon transition in China, and scenarios of a future climate-changed and low-carbon economy.

HD9650 9783527332571

The future of the chemical industry by 2050.

Valencia, Rafael Cayuela.

Wiley-VCH, ©2013 322 p. \$85.00

An economist with a large international chemical company, Valencia projects what the world and the chemicals business will look like at the middle of the century. The 20th century witnessed the largest and longest period of wealth creation in human history, he says, and predicts that the trend will accelerate until the gross domestic product is four times what it is today. He acknowledges energy scarcity

and climate change, but thinks the biggest challenges will be meeting global demand for everything and changes in how people live, communicate, and organize their lives.

LAW

K1420 9789041136695

Copyright and the challenge of the new.

Title main entry. Ed. by Brad Sherman and Leanne Wiseman. (Information law series; v.25)

Wolters Kluwer Law & Business, ©2012 271 p. \$135.00

This collection explore the ways in which copyright law has responded to and interacted with different technologies, with each chapter following the introduction focusing in turn on technologies associated with photography, telegraphy, radio, film, the phonogram, the photocopier, the tape player, television, and computer programs. The major concern of each chapter is with the challenges posed by new technologies (such as the phonogram's ability to record live performances and then reproduce them in other times and places) and how those challenges induced changes in the law.

KF390 9780876640081

The automation legal reference; a guide to legal risk in the automation, robotics and process industries.

Voigtmann, Mark.

ISA, ©2013 159 p. \$79.00 (pa)

Voigtmann, an attorney who advises automation providers, offers a guide to legal risk for those in the automation, robotics, and process industries, and lawyers working with them. He discusses automation projects and contracts; project delivery methods; the scope of work; contract clauses; negotiating contracts; specifications; intellectual property; automation standards; professional licensing; "green" considerations; changes and other mid-project communications; dispute resolution; negligence; insurance; liens, bonds, and other remedies; maintenance and service agreements; legalities for tough economic times; auditing legal health; and working with attorneys. There is no bibliography.

SCIENCE (GENERAL)

Q180 9781849201803

An introduction to systematic reviews.

Title main entry. Ed. by David Gough, Sandy Oliver and James Thomas.

Sage, ©2012 288 p. \$100.00

Researchers at the Evidence for Policy and Practice Information and co-ordinating Centre (the EPPI-Centre) at the Institute of Education in London share what they learned between 1993 and 2011 about conducting systematic reviews of the literature in the social and human sciences. The topics include stakeholder perspectives and participation in reviews, getting started with a review, finding relevant studies, describing and analyzing studies, combining results systematically and appropriately, and making a difference with systematic reviews.

Q183 9781439881392

Data-intensive science.

Title main entry. Ed. by Terence Critchlow and Kerstin Kleese van Dam. (Chapman & Hall/ CRC computational science series)

CRC Press, ©2013 420 p. \$89.95

Specialists in managing scientific data--many of them at Emory University's biomedical informatics department in Atlanta, but others from across the US and Europe--begin by explaining what data-intensive science is and where all the data comes from. Then they consider data-intensive grand challenge science problems, case studies, and from challenges to solutions. Among the topics are large-scale microscopy imaging analytics for *in silico* biomedicine, materials from business suits to space suits, data-intensive production grids, transforming data into the appropriate context, and analyzing exploration data *in situ* for scientific discovery.

Q183 9780769549347

Symbolic and numeric algorithms for scientific computing; proceedings.

International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (14th: 2012: Timisoara, Romania) Ed by Andrei Voronkov, Viorel Negru, Tetsuo Ida, Tudor Jebelean et al.

Computer Society Press, ©2012 524 p. \$231.00 (pa)

The annual symposium is designed to stimulate the interaction between the symbolic

and numeric computing communities and to present interesting applications of the algorithms developed by both. From the 93 presentations, 65 were selected for publication. Six invited talks discuss such topics as interactive versus automated proofs in computational origami, computing with free algebras, and The Flexiformist Manifest. Other papers explore symbolic and numerical computing, logic and programming, artificial intelligence, distributed computing, developments in the theory of computing, managing resources and services in cloud and sky computing, hybrid parallelization concept services, and agents for complex systems. Only authors are indexed.

Q337 9780124051638

Swarm intelligence and bio-inspired computation; theory and applications.

Title main entry. Ed. by Xin-She Yang, Zhihua Cui, Renbin Xiao, Amir Hossein Gandomi, and Mehmet Karamanoglu. (Elsevier insights) *Elsevier*, ©2013 422 p. \$125.00

Civil and other engineers, mathematicians, computer scientists, and other contributors summarize the current status of biologically inspired computation and swarm intelligence, looking at both fundamentals and applications of algorithms based on swarm intelligence and other biological systems. The topics include a mimetic self-adaptive firefly algorithm, a problem-oriented approach to modeling and simulating an ant colony's labor division, the development and application of the cuckoo search algorithm, modeling to generate alternatives using biologically inspired algorithms, and opportunities and challenges of integrating biologically inspired optimization and data mining algorithms. There is no index.

Q342 9781118337844

Computational intelligence; synergies of fuzzy logic, neural networks and evolutionary computing.

Siddique, Nazmul and Hojjat Adeli.

Wiley, ©2013 512 p. \$135.00

Siddique (computing and intelligent systems, U. of Ulster) and Adeli (engineering, The Ohio State U.) draw and expand on Adeli and Hung's groundbreaking 1995 *Machine Learning* to provide a tutorial and reference on combining the three paradigms to create computational intelligence. The material is suitable for graduate and advanced undergraduate engineering and science

students and researchers who have some knowledge of calculus, differential equations, and optimization theory. No prior knowledge of fuzzy logic, neural networks, or evolutionary computing is assumed. They introduce the MATLAB software system and use it for problems in most of the chapters.

MATH, COMPUTERS

QA8 9781138000162

A systemic perspective on cognition and mathematics.

Forrest, Jeffrey Yi-Lin. (Communications in cybernetics, systems science and engineering; v.1)

CRC Press, ©2013 416 p. \$79.95

Continuing his search for more than anecdotal evidence that the human mind and the rest of the universe operate on similar principles, Forrest (economics and management, Nanjing U. of Aeronautics and Astronautics and mathematics, Slippery Rock U., Pennsylvania) looks at elementary properties of systemic yoyos, the mind, mathematics seen as a systemic flow, and the next stage of mathematics as a systemic field of thought. As a case study, he reconstructs two systems of mathematics, one assuming that actual and potential infinity are different, and the other assuming that all infinities are the same. The series will present cross-disciplinary theoretical and applied research centering on cybernetic and systems methodology that address questions conventional science cannot.

QA76.585 9780133387520

Cloud computing; concepts, technology, & architecture.

Erl, Thomas and Zaigham Mahmood, Ricardo Puttini.

Prentice Hall, ©2013 487 p. \$49.99

Characterizing cloud computing as the convergence of outsourcing in the business world and utility computing in the technology world, prolific writers and consultants on information technology explain how to seize it to leverage proven and mature components to fulfill existing strategic business goals and inspire businesses to set new objectives and directions. They cover fundamental cloud computing, mechanisms, architecture, and working with clouds.

QA76.5915 9781466640382

Intelligent technologies and techniques for pervasive computing.

Title main entry. Ed. by Kostas Kolomvatsos, Christos Anagnostopoulos, and Stathes Hadjiefthymiades. (Advances in computational intelligence and robotics)

Information Science Reference, ©2013 331 p. \$195.00

Computer and information scientists, but also contributors in diverse fields, present their theoretical and applied research findings in pervasive computing, multi-agent systems, and computational intelligence. The balance of theory and application makes the volume useful for people developing pervasive computing and computational intelligence systems for practical use. Among the topics are learning methodologies to support electronic business in the automated negotiation process, a multi-agent system for improving resource allocation in higher-education programs, a wireless sensor network design for energy-efficient monitoring, applying automata in game theory, and a mechanism for predicting intention in an intentional pervasive information system.

QA76.76 9781466557277

Automatic defense against zero-day polymorphic worms in communication networks.

Mohammed, Mohssen and Al-Sakib Khan Pathan.

CRC Press, ©2013 318 p. \$89.95

A computer worm is a kind of malicious program that self-replicates automatically within a computer network, explain Mohammed (computer science and information sciences, Al-Imam Muhammad ibn Saud Islamic U., Saudi Arabia) and Pathan (computer science, International Islamic U., Malaysia), and a polymorphic version changes its payload in every infection attempt in order to evade intrusion. The defense against a polymorphic worm involves analyzing it manually to find its signature, which is much too slow to be effective against versions that replicate so fast that they can bring down the entire network in a few seconds--zero-day polymorphic worms. They draw from literature in a wide range of fields to describe how to generate signatures automatically for such worms. Among their topics are computer networking, intrusion detection and prevention systems, reading resources on automated signature generation systems, zero-day

polymorphic worms collection methods, and developed signature generation algorithms.

QA76.76 9781466640467

Cases on usability engineering; design and development of digital products.

Title main entry. Ed. by Michael A. Garcia-Ruiz. (Advances in human and social aspects of technology)

Information Science Reference, ©2013 444 p. \$175.00

Researchers and practitioners mostly in the computer and information sciences present case studies of usability methods, tests, and techniques to improve the human-computer interaction during the design and development of digital products. They cover web products, mobile applications, critical systems, virtual environments, simulations, and video games. The topics include social negotiations in web usability engineering, usability impact analysis of collaborative environments, towards a reliable strategy for evaluating the design of mobile text-based social applications, evaluating the usability of a touch screen in the flight deck, and a user-centered design based on brain computer interface for emotionally-driven user experience.

QA76.76 9781466573123

Computer system reliability; safety and usability.

Dhillon, B.S.

CRC Press, ©2013 231 p. \$99.95

Dhillon (mechanical engineering management, U. of Ottawa) synthesizes the vast but scattered literature on computer reliability, safety, and utility for computer scientists, software engineers, network administrators, and others responsible for keeping computers working. Among his topics are basic mathematical concepts, computer system reliability basics, software quality, software safety and Internet reliability, and web usability. Chapter-end problems are provided.

QA76.76 9781936420384

Multimedia web design and development; using languages to build dynamic web pages. (DVD-ROM included)

Richardson, Theodor and Charles Thies.

Mercury Learning and Information, ©2013 263 p. \$49.95 (pa)

In this guide to the concepts and best practices of interactive Web design and development, information technology instructors Richardson and Thies (the latter

at Tulane U.) cover all of the stages of, and languages for, creating professional websites. The initial chapters provide guidelines for front-end design using the tools of HTML5, CSS3, Adobe Dreamweaver, Microsoft Expression Web, and JavaScript. Subsequent chapters introduce PHP and Perl programming languages for developing back-end code for Web applications. Includes hands-on activities, review questions with an answer key, and a DVD with video tutorials, source code and images from the text. Distributed by International Publishers Marketing.

QA76.9 9780123972002

Advances in intelligence and security informatics.

Mao, Wenji and Fei-Yue Wang. (Intelligent systems series)

Academic Press, ©2012 107 p. \$125.00

Mao (automation, Chinese Academy of Sciences) and Wang (intelligent systems, National U. of Defense Technology, China) explain that the new field of intelligence and security informatics seeks to develop advanced information technologies, systems, algorithms, and databases for security-related applications. Their topics include agent modeling of terrorist organization behavior, generating a security story for computational experiments, forecasting group behavior with probabilistic plan inference, forecasting complex group behavior with multiple plan recognition, cyber-enabled social movement organizations, and cultural modeling for analyzing and predicting behavior. Academic Press is an imprint of Elsevier.

QA76.9 9781597499491

Advanced persistent threat; understanding the danger and how to protect your organization.

Cole, Eric.

Syngress Media, Inc., ©2013 290 p. \$49.95 (pa)

Cole (SANS Technology Institute) explains why advanced persistence threats are able to bypass security measures on many large computer systems and recommends how to protect an organization's data from these well-organized attackers. His solution integrates security control assessments with products for preventing reconnaissance, network intrusion, backdoor installation, unauthorized changes to systems, and social engineering. Syngress Media is an imprint of Elsevier.

QA76.9 9781597497336

Augmented reality; an emerging technologies guide to AR.

Kipper, Greg and Joseph Rampolla.

Syngress Media, Inc., ©2013 158 p. \$49.95 (pa)

Kipper (futurist, author, and emerging technologies strategic forecaster) and Rampolla (law enforcement officer, speaker, cyber crime consultant) explain what augmented reality (AR) is, how it can be used in a variety of industries and applications, and concepts for new applications in business and crime-fighting. Subjects discussed include types of AR, value of AR in several fields (such as military and public safety), and innovators and organizations. Syngress Media is an imprint of Elsevier.

QA76.9 9781439877302

The complete book of data anonymization; from planning to implementation.

Raghunathan, Balaji. (Infosys press)

CRC Press, ©2013 247 p. \$79.95

A software architect and information manager with an Indian business support company, Raghunathan describes the theory and procedures of separating personal information from the person in computer systems, so it cannot be used for illicit purposes. He provides a guide first for data anonymization program sponsors and then for practitioners. Among the topics are an enterprise data privacy governance model, the different phases of a program, tools and technology, data anonymization patterns, data flow patterns across environments, and implementing data anonymization.

QA76.9 9781845647087

Data management and security; applications in medicine, science and engineering.

Title main entry. Ed. by A. Rabasa, C.A.

Brebbia, and A. Bia. (WIT Transactions on information and communications technology; v.45)

WIT Press, ©2013 243 p. \$220.00

The First International Conference on Data Management and Security: Applications in Medicine, Sciences and Engineering was held in Elche, Spain. The 21 papers in the proceedings cover coding theory and cryptography applications, encryption, data management, statistical processing and data mining to solve real problems, and applications in medicine. Among specific topics

are improving image compression by using evolutionary computing algorithms, estimating traffic using the Levenberg-Marquardt neural network of a large information protocol system, the fuzzy logic modeling of a performance evaluation system for academic programs in Nigerian higher education, a methodology for planning evacuation routes inside buildings using geospatial technology, and heat transfer analysis in the human abdomen with a focus on correlation between the amount of abdominal fat and skin temperature. Only authors are indexed. The US office of WIT Press is Computational Mechanics.

QA76.9 9781439886816

Granular computing; analysis and design of intelligent systems.

Pedrycz, Witold. (Industrial electronics series) *CRC Press*, ©2013 287 p. \$129.95
Pedrycz (computational intelligence, U. of Alberta-Edmonton) explains granular computing, which was developed about a decade ago as a unified conceptual and processing framework by which to make meaning from the rising tide of data that washes nearly every human endeavor now. In natural languages information granules are implicit, he says, but to function fully in intelligent systems, they must be made explicit, which is accomplished with prudent formalisms. His topics include key formalisms for representing information granules and processing mechanisms, information granules of higher type and higher order, the design of information granules, a granular description of data and pattern classification, granular time series, and collaborative and linguistic models of decision making.

QA76.9 9781439879078

Identification and management of distributed data; NGN, content-centric networks and the web.

Bartolomeo, Giovanni and Tatiana Kováčiková. *CRC Press*, ©2013 278 p. \$89.95
Bartolomeo (Italian ministry of justice) and Kováčiková (U. of Zilina, Slovakia) introduce some of the protocols for naming and addressing on the internet, managing XML data, communicating over content-centric networks, and linking data. A section on next generation networks (NGN) describes the NGN functional architecture, the session initiation protocol, identifiers for NGN, the generic authentication architecture, and extensible

markup language document management. Resource description framework (RDF) code illustrates the triples format, RDF schema vocabulary, the web ontology language (OWL), reification, named graphs, graph patterns and querying from multiple graphs.

QA76.9 9780123971678

Managing data in motion; data integration best practice techniques and technologies.

Reeve, April.
Morgan Kaufmann Pub., Inc., ©2013 174 p. \$49.95 (pa)
Reeve, an enterprise information consultant with EMC, describes different techniques, technologies, and best practices for managing the transfer of data between computer systems and integrating disparate databases together within a large organization. Separate sections address batch data integration and real-time data integration, and the closing chapters discuss cloud solutions, data virtualization, big data architecture, and business intelligence tools.

QA76.9 9781466640306

Theory and practice of cryptography solutions for secure information systems.

Title main entry. Ed. by Atilla Elci, Josef Pieprzyk, Alexander G. Chefranov, Mehmet A. Orgun, Huaxiong Wang and Rajan Shankaran. (Advances in information security, privacy, and ethics)
Information Science Reference, ©2013 583 p. \$195.00
This collection explains cryptographic methods for securing information systems, exploring hardware design, schemes for distributed systems, and trust solutions. Nineteen contributions describe GOST algorithms, search in encrypted data, side channel information leakage attacks, secure neighborhood discovery deployment, secure multiparty computation, and PKI trust models. Case studies of electronic mail, e-voting systems, an online auction, and patient records in a health monitoring system demonstrate schemes and protocols for engineered secure information systems.

QA267 9781848214606

Constraint satisfaction problems; CSP formalisms and techniques.

Ghédira, Khaled. (Computer engineering and IT series)

ISTE/Wiley, ©2013 223 p. \$85.00

Writing for engineers, beginning or experienced researchers, and instructors, Ghédira (U. of Tunis, Tunisia) introduces the Constraint Satisfaction Problem (CSP) formalism and its foundation. Then he presents the main CSP-based techniques, which either solve such problems by backtracking-like algorithms, or speed up the resolution by consistency enforcing and/or heuristics using and/or learning. Other topics are search heuristics, maximal constraint satisfaction problems, constraint satisfaction and optimization problems, and distributed constraint satisfaction problems.

QA274 9781848212497

Applied diffusion processes from engineering to finance.

Janssen, Jacques and Oronzio Manca, Raimondo Manca. (Applied stochastic methods series)

ISTE/Wiley, ©2013 393 p. \$175.00

Janssen (honorary, Solvay Business School, Belgium), O. Manca (thermal sciences, Seconda U. degli Studi di Napoli, Italy), and R. Manca (mathematics of economics, finance, and actuarial science; U. of Rome "La Sapienza") show how partial differential equations can link the fields of engineering, physics, and finance. Among the topics are probabilistic models of diffusion processes, exotic and American options pricing theory, hitting times for diffusion processes and stochastic models in insurance, Lévy processes, and Monte Carlo semi-Markov simulation methods. Professionals in any of the three fields who have a good knowledge of probability theory could find the material useful.

QA278 9783527410835

Distribution theory; with applications in engineering and physics.

Teodorescu, Petre P. and Wilhelm W. Kecs, Antonela Toma.

Wiley-VCH, ©2013 381 p. \$190.00

Romanian scientists Teodorescu (U. of Bucharest) Kecs (U. of Petrosani), and Toma (U. Politehnica Bucharest) present elements of the theory of distributions as well as theorems

with possibility of application. Particular emphasis is paid to the mathematical representation of concentrated and distributed loads, in order to provide a unitary form for solutions to problems encountered in the mechanics of deformable solids. Among their topics are integral transformations of distributions, the representation in distributions of mechanical and physical quantities, applications of the distribution theory to the mechanics of the linear elastic bodies, applications in electrical engineering, and applications in physics.

ASTRONOMY

QB495 9780877035930

Results and opportunities -- the decade of utilization; proceedings. (CD-ROM included)

ISS Research and Development Conference (1st: 2012: Denver, Colorado) Ed. by Julie A. Robinson and David B. Spencer. (Science and technology series; v.114)

Univelt Inc., ©2013 577 p. \$160.00

Some 400 scientists attended the conference to share results of research on or associated with the International Space Station (ISS). The approximately 150 full papers and abstracts in the proceedings explore such areas as human research, communications and navigation technologies, technical Earth imaging, materials science and combustion science, cell biology and tissue engineering, plant and animal biology in space, fundamental physics, human exploration, robotics, fluid physics, international partners, and enabling exploration beyond Earth orbit. A supplement to *Advances in the Astronautical Sciences*. The volume is not indexed, but the disk is searchable, and is available separately from the book.

PHYSICS

QC145 9781119944843

Introductory fluid mechanics for physicists and mathematicians.

Pert, Geoffrey J.

Wiley, ©2013 468 p. \$155.00

Fluid mechanics tends to be neglected by modern physics curricula, says Pert (physics, U. of York, Britain), and attributes that to its being considered classical, so old fashion, and because it was generally developed by engineers and applied mathematicians, so grew up on the wrong side of the academic tracks. He offers a pedagogical summary of

the physics of fluid flow, abstracting several classic texts that readers are referred to for more detail. The succinctness of his treatment has forced him to exclude flows in a rotating environment and computational fluid dynamics. His topics include flow of ideal fluids, waves and instabilities in fluids, convective heat transfer, aerofoils in low-speed incompressible flow, and self-similar methods in compressible gas flow and intermediate asymptotics.

QC176 9783037857014

Engineering applications of nanoscience and nanomaterials; special topic volume with invited peer reviewed papers only.

Title main entry. Ed. by Ajay Bansal and Rajesh J. Tayade. (Materials science forum; v.757)

Trans Tech Publications, ©2013 297 p. \$166.00 (pa)

Contributors from a wide range of sciences describe how science and engineering at the nanometer scale is being used in a number of fields. The topics include nano-sized and nano-crystalline sulfated zirconia solid acid catalysts for organic synthesis, incorporating modified nano-montmorillonite in polyurethane coating base on acrylic copolymer and trimer of isophorone diisocyanate, thermal conductivity of nanofluids, the stability of nanofluids, solid oxide fuel cell as a future source of power and heat generation, and carbon doping to enhance the photofunctions of dye-encapsulated photocatalytic activity of nano-titanium oxide.

QC611 9781118398142

Practical design of magnetostatic structure using numerical simulation.

Wang, Qiuliang.

Wiley, ©2013 480 p. \$140.00

Writing mainly for practicing engineers engaged in magnet design, but perhaps also graduate students conducting their research, Wang (electrical engineering, Chinese Academy of Sciences) illustrates in some detail approaches to solving several kinds of magnet design problems. Among his topics are magnetostatic equations for the magnet structure, finite element analysis for the magnetostatic field, numerical methods for solenoid coil design, a high field magnet with high homogeneity, and electromechanical effects and forces on the magnet.

CHEMISTRY

QD341 9783527332588

Graphene; synthesis, properties, and phenomena.

Title main entry. Ed. by C.N.R. Rao and Ajay K. Sood.

Wiley-VCH, ©2013 416 p. \$170.00

Materials scientists, chemists, and physicists survey some of the salient aspects of single-layer or few-layer graphene and a few graphene-like inorganic layered materials that are of current interest. Among the topics are investigating graphene with Raman scattering, the physics of quanta and quantum fields in graphene, suspected graphene devices for nanoelectromechanics of and for studying the quantum Hall effect, a detailed computational study of electronic and magnetic properties of patterned nanoribbons, heterogeneous catalysis by metal nanoparticles supported on graphene, and biomedical applications. The anthology could introduce students, teachers, and researchers to the recently discovered form of carbon.

QD382 9783527331437

Conjugated polyelectrolytes; fundamentals and applications.

Title main entry. Ed. by Bin Liu and Guillermo C. Bazan.

Wiley-VCH, ©2013 418 p. \$165.00

A unique combination of physical properties and their recent role as key elements in emerging technologies have brought conjugated polyelectrolytes to the attention of scientists. This is the first volume devoted to the fundamentals and applications of the broad class of materials. Chemists and nuclear engineers consider such aspects as their design and synthesis, ionically functionalized polyacetylenes, sensing applications using energy transfer from conjugated polyelectrolytes, biocide applications, imaging and monitoring protein aggregation using conjugated polyelectrolytes, and organic optoelectronic devices containing water/alcohol-soluble conjugated polymers and conjugated polyelectrolytes.

QD382 9780470973233

Metallofoldamers; supramolecular architectures from helicates to biomimetics.

Title main entry. Ed. by Galia Maayan and Markus Albrecht.

Wiley, ©2013 445 p. \$155.00

Metallofoldamers are synthetic oligomers that fold upon interactions with metal ions to give various stable architectures in solution. In this volume, chemists explore the whole field of structure control in oligomeric, polymeric, biomimetic, and biological systems from the simple helicates to polymers and natural or artificial peptides or DNA. The topics include metalloproteins and metallopeptides as natural metallofoldamers, self-assembly principles of helicates, helical structures featuring thiolato donors, designing the supramolecular liquid-crystalline helicates, metal complexes as alternative base pairs for triplets in natural and synthetic nucleic acid structures, and applications.

QD382 9781118344545

Polymers for energy storage and conversion.

Title main entry. Ed. by Vikas Mittal. (Polymer science and plastics engineering)

Wiley, ©2013 253 p. \$175.00

Physical scientists and engineers describe new application of polymers in storing and converting energy that are possible because a number of recent improvements in controlling polymer molecular structure allow the properties of the polymer to be tuned more finely. The topics include high-performance materials for fuel cells based on polymer hydrogels, lithium polymer batteries based on ionic liquids, organic quantum dots grown by molecular layer deposition for photovoltaics, solvent effects in polymer-based organic photovoltaics, and energy as storage in porous polymers.

QD412 9783527331666

Modern fluoroorganic chemistry; synthesis, reactivity, applications.

Kirsch, Peer.

Wiley-VCH, ©2013 379 p. \$190.00

A chemist with a German drug company, Kirsch introduces synthetic chemists to a wide range of synthesis methods based on the mechanistic background and the unique chemical and physiochemical properties of fluoroorganic compounds. Some of them can be performed with relatively standard laboratory equipment, he says, to allow readers to ease

into the field. After introductory chapters, he covers perfluoroalkylation; selected fluorinated structures and reaction types; the chemistry of highly fluorinated olefins; fluorous chemistry; fluorous synthesis and combinatorial chemistry; halofluorocarbons, hydrofluorocarbons, and related compounds; and pharmaceutical and other biomedical applications.

QD565 9780470074701

Ionic liquids uncoiled; critical expert overviews.

Title main entry. Ed. by Natalia V. Plechkova and Kenneth R. Seddon.

Wiley, ©2013 413 p. \$149.95

Chemists, chemical engineers, biochemists, and biologists recognized for their knowledge of ionic liquids were solicited to provide an authoritative reference on selected aspects of ionic liquid chemistry. Among the topics are interfaces of ionic liquids, separation science, theoretical approaches from past history to future directions, ionic liquids derived from natural sources, the potential of filamentous fungi in pioneering biological processes in the presence of ionic liquids, using ionic liquids in dye-sensitized solar cells, and the phase behavior of gases in ionic liquids. All the contributors have presented papers at one of the Congress on Ionic Liquids (COIL) meetings, but these essays are separate from those presentations, thus are unCOILED.

MICROBIOLOGY

QR63 9781439822227

Histochemical and cytochemical methods of visualization.

Title main entry. Ed. by Jean-Marie Exbrayat. (Methods in visualization)

CRC Press, ©2013 335 p. \$179.95

Microscopic observations in histochemistry and cytochemistry became rare after the 1980s, and now that some researchers are using them again in specific cases, references on them are difficult to find. Researchers mostly in France, but also Belgium and Britain, explain the basics of using both light and transmission electron microscopy in the two fields, describing several classical techniques for both experienced and novice researchers, technicians, and students. Among the topics are enzyme histochemistry methods, visualizing apoptosis, cytochemical techniques, preparing samples for electron microscopy, and image quantification in histology and cytology.

MEDICINE (GENERAL)

R855 9781439848036

Imaging in cellular and tissue engineering.

Title main entry. Ed. by Hanry Yu and Nur Aida Abdul Rahim. (Series in cellular and clinical imaging)

CRC Press, ©2013 262 p. \$149.95

Physicists, electronic and biochemical engineers, and other contributors describe how imaging is used in specific application of cellular and tissue engineering. Their topics include confocal microscopy for high-content cellular screening, magnetic resonance imaging to monitor implanted constructs, applying imaging technologies to stem-cell tracking *in vivo*, imaging therapeutic processes in animals using optical reporter genes, and image analysis for cellular and tissue engineering.

R857 9780857090171

Biomaterials and medical tribology; research and development.

Title main entry. Ed. by J. Paulo Davim. (Woodhead Publishing series in biomaterials; no.65)

Woodhead Publishing, ©2013 459 p. \$270.00

Contributors mostly from the physical sciences and engineering, but also a few from medical sciences, explore medical tribology, which studies the design, friction, wear, and lubrication of sliding and frictional interfaces in the human body, with a particular focus on implants. The book can be used in a senior undergraduate engineering course or in a graduate course on biomaterials and medical tribology. The topics include synergism effects during friction and fretting corrosion experiments on biomaterials used as orthopedic implants, applying biomedical-grade titanium alloys in trabecular bone and artificial joints, determining wear on a retrieved metal-on-metal hip arthroplasty with an example of extreme wear, the importance of bearing porosity in engineering and natural lubricants, and the tribological characterization of human tooth enamel.

R857 9781118140420

Micro and nanotechnologies in engineering stems cells and tissues.

Title main entry. Ed. by Murugan Ramalingam, Esmail Jabbari, Seeram Ramakrishna and Ali Khademhosseini.

IEEE/Wiley, ©2013 306 p. \$149.95

Biological and chemical engineers, materials scientists, and other researchers provide a snapshot of the current state of technologies at the micrometer and nanometer scales being used to design novel materials that display the complex cell-cell and cell-matrix interactions that are the basis of building new body parts by assembling basic biological components. The topics include stem cells and nanotechnology in tissue engineering and regenerative medicine, micro-engineering and nano-engineering approaches to developing gradient biomaterials suitable for interface tissue engineering, integrating top-down and bottom-up scaffolding tissue engineering approaches for bone regeneration, characterizing the adhesive interactions between cells and biomaterials, vascular tissue engineering, and applying stem cells in ischemic heart disease.

R858 9780323100953

Health informatics; an interprofessional approach. (online access included)

Nelson, Ramona and Nancy Staggers.

Elsevier Mosby, ©2014 535 p. \$72.95 (pa)

Nelson (nursing, Slippery Rock U.) and Staggers (informatics, U. of Maryland) bring together nurses and informatics specialists mainly from the US for this textbook on health informatics for advanced undergraduate and graduate students in various health disciplines. In 31 chapters, they describe the history of the field, terms and definitions, theories, models, conceptual frameworks, evidence-based practice, practice-based evidence, and program evaluation; the major areas of healthcare practice, related applications, and supporting technical infrastructure, including electronic health records, telehealth, home health, clinical decision support, and public health informatics; e-patient and related applications or technology, such as social media and personal health records; leading informatics-related projects, including policies and procedures for privacy and security; quality, usability, and standards; governance and organizational structures, legal issues, and health policy; education and informatics,

including educational tools, simulation, distributive education, educational applications and issues, and informatics in the curriculum; and international informatics.

RS192 9781907568275

Computer-aided applications in pharmaceutical technology.

Title main entry. Ed. by Jelena Djuris. (Woodhead Publishing series in biomedicine; 52)

Woodhead Publishing, ©2013 269 p. \$220.00

The contributors explain the basics of experimental design application and interpretation used in the development and evaluation of pharmaceutical products. This review of numerous current computer-aided pharmaceutical technology applications touches on a variety of topics, including: quality by design in pharmaceutical development, computer-aided formulation development, experimental design application and interpretation, neural computing in pharmaceutical products and process development, computational fluid dynamics applications, and computer-aided biopharmaceutical characterization in gastrointestinal absorption simulation. An extensive list of abbreviations also is included. Editor is Djuris (pharmaceutical technology and cosmetology, U. of Belgrade, Serbia.

RS201 9781118148877

Nanoparticulate drug delivery systems; strategies, technologies, and applications.

Title main entry. Ed. by Yoon Yeo.

Wiley, ©2013 312 p. \$150.00

Enthusiasm for nanomedicine has grown exponentially because it addresses critical problems in delivery of some drugs such as poor absorption, toxic side effects, and multiple drug resistance, but challenges remain in translating novel ideas into clinical benefits, e.g, the promise of the active targeting strategy to increase tumor accumulations of nanoparticles has not proved to be a magic bullet. In this state-of-the-art contribution to the field, Yeo (industrial and physical pharmacy, biochemical engineering, Purdue U., Indiana) introduces a dozen chapters reviewing the latest nanomedicine technologies and their preclinical evaluation. Following an overview of targeted nanomedicine, chapters discuss nanoparticulate drug delivery systems

that have gained growing recognition, and opportunities and challenges posed by the relevant biology. Includes supporting tables and figures, and extensive references.

TECHNOLOGY (GENERAL)

T10 9783037856727

Information, communication and engineering.

International Conference on Information, Communication and Engineering (2012: Fuzhou, China) Ed. by Teen-Hang Meen.

(Applied mechanics and materials; v.311)

Trans Tech Publications, ©2013 567 p. \$206.00 (pa)

The 94 selected papers cover advanced computer and information science, network, communication, and virtual system applications in industry; applied mathematics; recognition and monitoring technologies; electrical and electronic engineering, automation, and applied mechanics applications; creative and product design, knowledge innovation in industry; green technology and architecture engineering; material science engineering and technology; medical engineering applications; and miscellaneous topics. Among specific topics are the social network service of university library websites, a fast and smooth carving algorithm for online three-dimensional reconstruction, analyzing motion trauma for human running by motion capture, concept development in creative product design, computer simulation of the fractal growth of semiconductor thin films, and the effects of a blogger's moral intensity on ethical decision making.

T55 9781439878200

Hazardous chemicals; safety management and global regulations.

Dikshith, T.S.S.

CRC Press, ©2013 638 p. \$149.95

Toxicologist Dikshith has worked extensively in agriculture, pharmaceuticals, and chemicals and with government and international agencies and programs in India and around the world. Here he provides quick access to information on the safety management of chemical substances, and appropriate recent scientific information for students, workers in occupations where they might encounter hazardous chemicals, and scientists who study such chemicals. Most of the volume describes safe handling and precautions

for specific chemicals in alphabetical order. Other chapters cover characterizations of hazardous chemicals, perspectives and scenarios of chemicals that can injure eyes, global regulations, and a hazardous chemical substances and safety management system.

T57 9781420082562

Enterprise dynamics sourcebook.

Title main entry. Ed. by Kenneth C. Hoffman, Chris Glazner, William Bunting, Len Wojcik and Anne Cady. (Complex and enterprise systems engineering)

CRC Press, ©2013 355 p. \$89.95

Reprinted, sometimes revised, published papers and reports document case studies that provide a starting point for a new discipline of enterprise dynamics as a core capability of enterprise systems engineering. The topics include foundations of enterprise systems engineering and architecting, simulating enterprise architecture for a business strategy, optimal control and differential game modeling of a systems engineering process for transformation, nuclear waste management strategic framework for a large-scale government program, and modeling the nation's healthcare system as a dynamic enterprise.

T58 9780133155501

Patterns of information management.

Chessell, Mandy and Harald C. Smith.

IBM Press, ©2013 700 p. \$54.99

This book is for enterprise, information, and solution architects working on linking information systems in complex environments. Stressing that information patterns form the basis of a whole new architectural approach to systems design, the book demonstrates how technologies for information management, SOA, and business process management can be blended to create a manageable IT landscape. The book presents architecture patterns that characterize typical information issues associated with distributed systems; the patterns show how information is managed and used along the 'information supply chain.' Techniques are applied in a chapter-length case study of a fictional company. Chessell is affiliated with the IBM Academy of Technology Leadership Teams. Smith is an IBM Software Architect.

ENGINEERING (GENERAL, CIVIL)

TA9 9781118344576

Dictionary of industrial terms.

Holloway, Michael and Chikezie Nwaoha.

Scrivener/Wiley, ©2013 665 p. \$249.00

This is a nearly no-frills dictionary of industrial terms, where industrial refers to both engineering and management aspects of production processes, as well as business terms. There are over 11,000 entries, such as lag time, idle mode, hard failure, drift of an operating characteristic, planned downtime, order processing, and more. They're listed in alphabetical order in a simple block format and are at most a couple hundred words, though the vast majority are only a sentence or two. They are written in plain language, but are not meant to comprehensively introduce any given word and at times assume background knowledge of related terminology. Each entry also ends with a note about the field a term applies to, like civil engineering or quality or procurement, but there is no index for these terms or the text as whole. Holloway is writes about industrial concerns, while Nwaoha is a petroleum engineering and writer.

TA164 9780123944306

Synthetic biology; tools and applications.

Title main entry. Ed. by Huimin Zhao.

Academic Press, ©2013 333 p. \$149.95

Chemical, biological, and biochemical engineers describe tools and methodologies developed for engineering biological systems at a wide range of levels, including molecular, pathway, network, whole cell, and multi-cell. They also explore practical applications of synthetic biology, a branch of genetic engineering that incorporates systems biology. Among their topics are protein engineering as an enabling tool for synthetic biology, theoretical considerations for reprogramming multicellular systems, computational methods for strain design, the synthetic biology of microbial biofuel production, and towards engineering the conversion of light into energy by non-photosynthetic microorganisms.

TA165 9780470639054

Integrated tracking, classification, and sensor management; theory and applications.

Title main entry. Ed. by Mahendra Mallick, Vikram Krishnamurthy and Ba-Ngu Vo. *IEEE/Wiley*, ©2013 712 p. \$145.00

Computer scientists and electrical engineers survey the current state of multi-target tracking and sensor management, first developed for aerospace and space exploration but now also used in image processing, oceanography, autonomous vehicles, and other applications. They cover filtering, multi-target multi-sensor tracking, sensor management and control, estimation and classification, and decision fusion and decision support. Among specific topics are angle-only filtering in three dimensions, the continuous time roots of the interacting multiple model filter, track-before-detect techniques, a stochastic control approach to managing radar resources for target tracking, evaluating multi-sensor classification performance with Bayesian networks, and evidential networks for decision support in surveillance systems.

TA165 9781466568105

Smart sensors for industrial applications.

Title main entry. Ed. by Krzysztof Iniewski. (Devices, circuits, and systems)

CRC Press, ©2013 562 p. \$149.95

Engineers mostly in academic positions survey various types of sensors being used for commercial purposes. They cover photonic and optoelectronic; infrared and thermal; magnetic and inductive; sound and ultrasound; and piezo-resistive, wireless, and electric sensors. The topics include laser Doppler velocimetry technology for integration and directional discrimination, thin film resistance temperature detectors, inductive sensors fitted in aircraft windows to measure lightning current, wideband ultrasonic transmitter and sensor array for in-air applications, and applying inertial sensors in developing smart particles.

TA169 9783110285154

Engineering risk management.

Meyer, Thierry and Genserik Reniers.

De Gruyter, ©2013 284 p. \$98.00 (pa)

Chemical engineers Meyer (Swiss Federal Institute of Technology, Lausanne) and Reniers (Catholic U. of Leuven, Belgium) specialize in risk management and offer

an engineering perspective on managing a company's risk in all areas except finances. They cover engineering and managing risks, risk management principles, risk diagnosis and analysis, treating and reducing risk, event analysis, crisis management, economic issues of safety, risk governance, examples of practical implementation of risk management, and major industrial accidents and learning from them. The information and ideas could be useful to any manager, but particularly to safety engineers.

TA190 9781466570610

Problem solving for engineers.

Carmichael, David G.

CRC Press, ©2013 415 p. \$79.95 (pa)

The most rational way to develop a framework for problem solving is through a systems studies approach, contends Carmichael (civil engineering, U. of New South Wales, Australia), so starts by outlining systems methodology; modeling; and the various systems of configuration of analysis, synthesis, and investigation. Then he outlines a systematic process for problem solving and shows how problem solving and decision making lie within a systems synthesis configuration. Among the topics are creativity, general problem solving with groups, decision making with multiple objectives, and optimization.

TA418 9781118290408

Cathodic protection; industrial solutions for protecting against corrosion.

Cicek, Volkan.

Wiley, ©2013 329 p. \$175.00

Clearly organized and to the point, this volume is a companion to the author's previous work, *Corrosion Chemistry* (2012: Wiley-Scrivener). Coverage here encompasses both theoretical aspects and practical applications for corrosion scientists and others working in virtually any context where corrosion is an issue. Chapters address corrosion issues in concrete structures, reinforced concrete steels, the petroleum industry, pipeline systems and storage tanks, metallic structures in seawater, potable water tanks, and boilers, among other topics. The final chapter is on corrosion and corrosion prevention in geothermal systems. Cicek (Ishik U., Iraq) is a chemist and corrosion scientist educated in Turkey and the US (Oklahoma).

TA418 9780857092342

Developments in fiber-reinforced polymer (FRP) composites for civil engineering.

Title main entry. Ed. by Nasim Uddin.
(Woodhead Publishing series in civil and structural engineering; no.45)
Woodhead Publishing, ©2013 525 p.
\$290.00

Approaching from both the engineering and the materials side, researchers explore how some thermosetting or thermoplastic resins are combined with glass and/or carbon fibers, so that in civil engineering applications, the fiber network provides the load-bearing component while the resin transfers the load to the fibers, maintains the fiber orientation, and protects the fibers from the environment. The topics include types of fiber and fiber arrangement, failure modes in structural applications and their prevention, hybrid composites for structural applications, thermoplastic composite structural insulated panels for modular panelized construction, strengthening steel structures, and environmental engineering applications.

TA418 9781605950907

Nanocoatings; principles and practice; from research to production.

Abbott, Steven and Nigel Holmes.
DEStech Publications, Inc., ©2013 329 p.
\$179.50

Abbott (independent consultant; visiting professor, U. of Leeds, UK) and Holmes (UK-based coatings scientist) have seen it all: great inventions in the lab that go nowhere because of glitches in production or the impossibility of scaling up or unrealistic expectations regarding production time and money. Getting a product to market is fraught with pitfalls from start to finish, and "nanohype" (the authors' term) refers to the many high hopes that have been dashed for one reason or another. This lively, authoritative treatise addresses just what's announced in the title. Coverage includes why we need nano, finding the right nanoadditive, creating stable nanoformulations, the perfect solvent, printing and drying, 3D coatings, and nanosafety, among other topics.

TA418 9780857093448

Non-destructive evaluation (NDE) of polymer matrix composites; techniques and applications.

Title main entry. Ed. by Vistasp M. Karbhari.
(Woodhead Publishing series in composites science and engineering; no.43)
Woodhead Publishing, ©2013 692 p.
\$325.00

Twenty-five contributions address non-destructive evaluation and testing techniques with regard to monitoring structural health when polymer matrix composites are part of the picture, as they are, increasingly. Coverage encompasses the use of acoustic emission, eddy current, shearography, dielectric measurements, ultrasound, microwave, fiber optic sensing, and infrared thermography techniques. Applications include adhesive bonds, sandwich panels, delamination defects, aerospace composites, and civil and marine structures. Karbhari, a seasoned expert in the field, is president of the U. of Texas at Arlington.

TA418 9781909030244

Update on carbon fibre.

Bajpai, Pratima.
Smithers Rapra, ©2013 145 p. \$130.00
Bajpai (chemical and biochemical engineering, U. of Western Ontario) brings together current information on the production, properties, applications, and future of carbon fibers. She also reviews the status of carbon-fiber reinforced polymer recycling operations, focusing on reclamation and re-manufacturing processes, and on the commercialization and potential applications of recycled products.

TA455 9781569904602

Nano- and micro-mechanics of polymers; structure modification and improvement of properties.

Michler, Goerg H. and Francisco J. Baltá-Calleja.
Hanser Publications, ©2012 566 p. \$299.95
Michler (physics, Martin Luther U., Wittenberg, Germany) and Baltá-Calleja (structure of materials, Spanish National Research Council--CSIC, Madrid) begin by reviewing the importance of polymers in materials science particularly and in the world at large, and methods and investigating techniques for studying their structure and dynamics at very small scales. Then they set out the general mechanisms of deformation and fracture, and devote the rest of the volume

to showing how these mechanisms apply to the main groups of polymer materials. These are amorphous and semicrystalline polymers, polymer blends, rubber-toughened polymers, composites, nanostructured polymers, and special forms and applications. High quality microphotographs illustrate many of the structures described.

TA481 9781847356383

Advances in nanofibre research, v.3

Haghi, Akbar K. and Gennady E. Zaikov. *Smithers Rapra*, ©2012 118 p. \$200.00 Haghi (U. of Guilan, Rasht, Iran) and Zaikov (Russian Academy of Science, Moscow, Russia) have created this third volume, which describes the many directions in which the science and technology of polymer and nanofibres are now evolving and highlights the current understanding of polymer nanofibres and nanocomposites. The book is divided into four parts: Update on Nanofinishign of Textiles; Update on Fabrication of Modified Electrospun Nanofibres; Update on Production of Metal/Polymer Nanocomposites and Biocompatible Nanofibres; and Update on the Role of Process Control Parameters on the Production of Electrospun Nanofibres. Contains scanning electron microscope (SEM) micrographs, tables, figures, and charts.

TA484 9783037857304

Machining of titanium alloys and composites for aerospace applications.

Title main entry. Ed. by R. Zitoun, V. Krishnaraj, and Paulo Davim. (Materials science forum; v.763) *Trans Tech Publications*, ©2013 171 p. \$138.00 (pa) Eight invited and peer-reviewed papers offer perspectives by mechanical and materials engineers on issues related to machining aerospace parts made of the two materials. Their topics include turning investigations on machining of titanium alloy Ti64 with different cutting tool inserts, the multi-objective optimization of drilling titanium alloy Ti64A4V, the laser assisted machining of titanium alloys, the influence of tool geometry and machining parameters on the surface quality and the effect of surface quality on the compressive strength of plastic reinforced with carbon fiber, and challenges in drilling multi-materials.

TA492 9783527329045

Testing adhesive joints; best practices.

Title main entry. Ed. by Lucas F.M. da Silva, David A. Dillard, Bamber Blackman and Robert D. Adams.

Wiley-VCH, ©2012 440 p. \$140.00

Mechanical engineers and materials scientists explore testing joints from the perspectives of manufacturing quality specimens, quasi-static constitutive and strength tests, quasi-static fracture tests, higher rate and impact tests, durability, and other test methods. Among specific topics are preparing thick adherend shear test specimens, quasi-testing bulk compression on flat specimens, the pin-and-collar test method, the compact mixed mode fracture test method, testing adhesive bonds under peel and shear loads at increased velocities, and measuring time-dependent crack growth.

TA1634 9780470828120

Selective visual attention; computational models and applications.

Zhang, Liming and Weisi Lin.

IEEE/Wiley, ©2013 332 p. \$140.00

Visual attention studies have pass through the three stages of biological studies, computational models, and applications, say Zhang (Fudan U., China) and Lin (Nanyang Technological U., Singapore), and they follow the same path as they explain the question for researchers, engineers, and students of physics, mathematics, information science, and computer science. They cover the background theory and experiments of visual attention; computational models in the spatial domain; fast bottom-up computational models in the spectral domain; computational models for top-down visual attention; validation and evaluation for visual attention models; applications in computer vision, image retrieval, and robotics; and applying attention models in image processing.

TA1637 9781848212572

Signal and image multiresolution analysis.

Title main entry. Ed. by Abdeldjalil Ouahabi. (Digital signal and image processing series)

ISTE/Wiley, ©2012 293 p. \$145.00

Ouahabi, Jean-Marc Girault (both U. Francois Rabelais, Tours, France), Régis Fournier, and Amine Naït-Ali (both U. Paris-Est Créteil) provide a simple formalization and new clarity for the multi-resolution analysis of signals and images, for industrial engineers,

medical researchers, university instructors and researchers, and graduate engineering students. After introducing multi-resolution analysis, they cover discrete wavelet transform-based multi-fractal analysis, a supervised insertion approach to multimodal compression using JPEG 2000, and the synchronous detection of cerebral micro-embolism with wavelet packets.

TA1700 9781119990338

Semiconductor laser engineering, reliability and diagnostics; a practical approach to high power and single mode devices.

Epperlein, Peter W.

Wiley, ©2013 496 p. \$130.00

By integrating diode laser engineering, reliability engineering, and diagnostics, British semiconductor technology consultant Epperlein presents a novel approach to analyzing and designing high-power and single-mode optical devices. It provides just the blend of underlying basic physics and practical realization to deal with the issues encountered, he says. His topics include basic diode laser engineering principles; optical strength engineering; a diode laser reliability engineering program; and novel diagnostic laser data for active layer material integrity, impurity trapping effects, and mirror temperatures.

TA1700 9780857091215

Semiconductor lasers; fundamentals and applications.

Title main entry. Ed. by Alexei Baranov and Eric Tournié. (Woodhead Publishing series in electronic and optical materials; no.33)

Woodhead Publishing, ©2013 647 p.

\$325.00

Physicists, electrical engineers, and other researchers review the science and technology of semiconductor lasers half a century after they were first developed. Among the topics are photonic crystal lasers, semiconductor laser beam combining, ultrafast pulse generation by semiconductor lasers, vertical cavity surface emitting lasers, semiconductor disk lasers, interband cascade lasers, whispering gallery mode lasers, and tunable mid-infrared laser absorption spectroscopy.

TA1770 9783527410569

Advances in acoustic microscopy and high resolution imaging; from principals to applications.

Title main entry. Ed. by Roman Gr. Maev. Wiley-VCH, ©2013 381 p. \$185.00

Thirteen contributed chapters begin with the fundamentals, addressing multiwave imaging to elasticity imaging, and speckle interferometry and nonlinear methods.

Following is coverage of novel developments in techniques and methods such as applications of a quantitative ultrasonic microscope for soft biological tissues, and portable ultrasonic imaging devices. Subsequent chapters address advanced biomedical applications, and advanced materials applications. Editor Maev is affiliated with the U. of Windsor Institute for Diagnostic Imaging Research, Canada; contributors include a couple of his associates as well as scientists based around the world.

ENVIRONMENTAL TECHNOLOGY

TD430 9781612336190

Nanotechnology for water purification.

Title main entry. Ed. by Tania Dey.

Universal Publishers, ©2012 249 p. \$69.95 (pa)

This book describes how cutting-edge nanotechnology can be used to address today's burning issue of water pollution. This book is written from materials science perspective and not from the bio-treatment point of view. The strength of this book lies in covering a wide range of nanomaterials (e.g. magnetic nanoparticles, cellulose nanofibers, carbon nanotubes, silver-impregnated cyclodextrin nanocomposites, nanostructured iron-zeolites, carbo-iron nanomaterials, photocatalytic titania nanoparticles, nanofiltration membranes and functionalized silica nanoparticles), clearly elucidating the science behind their specific applications and including ecological risk assessment at the end. These 10 chapters are primarily based on literature review and not just on authors' own research work. This book will be a useful reference for scientists working in the same field. Dey has worked as a research scientist in colloid/polymer science, advanced materials and nanotechnology. No index is provided.

TD468 9783527331871

Photocatalysis and water purification; from fundamentals to recent applications.

Title main entry. Ed. by Pierre Pichat.

Wiley-VCH, ©2013 406 p. \$175.00

Specialists in heterogeneous photocatalysis to purify water synthesize the vast technical literature on the process to provide an opening for people who would like to enter the field. They cover the fundamentals of active species, mechanisms, and reaction pathways; improving the photocatalytic efficacy; the effects of photocatalysis on natural organic matter and bacteria; and modeling, reactors, and pilot plants. Among the topics are photocatalytic mechanisms and reaction pathways drawn from kinetic and probe molecules, designing and developing active titania and related photocatalysts, photoelectrocatalysis for water purification, waterborne *Escherichia coli* inactivated by titanium oxide photoassisted processes, and commercially available reactors.

TD796 9780857090119

Waste to energy conversion technology.

Title main entry. Ed. by Naomi B. Klinghoffer and Marco J. Castaldi. (Woodhead Publishing series in energy; no.29)

Woodhead Publishing, ©2013 234 p. \$205.00

This collection of individually authored chapters presents research essays on the challenges and opportunities of converting waste in human-built systems into useful energy. In many cases this is achieved through combustion and on-site case-studies. Chapters explore the social impact of waste to energy conversion plants, treating municipal solid waste, and equipment considerations for treatment plants. They are organized into three sections that introduce the impact of waste to energy recovery engineering, survey several waste to energy systems, and also examine pollution control systems in waste to energy technologies. The chapters are technically demanding and require a background in engineering or related scientific fields. They are self-contained and only integrated by an editorial introduction. The editors and contributors include engineers working at private firms and teaching at universities.

BUILDING CONSTRUCTION

TH880 9783037856581

Green technologies for sustainable & innovation in materials; select papers.

International Materials Technology Conference & Exhibition (8th: 2012: Petaling Jaya, Malaysia) Ed. by M.K. Harun, M.Z.A. Yahya, S. Abdullah and C.H. Chan. (Advanced materials research; v.686)

Trans Tech Publications, ©2013 356 p. \$207.00 (pa)

The Institute of Materials Malaysia has been organizing the biennial conference since 1990, and over 300 papers were presented at its 2012 incarnation. Of those, 46 were selected for publication in the proceedings. They cover nanomaterials and green technology; polymer, composite, and advanced materials; metals and alloys; corrosion and coating technology; ceramic materials; and material processing and technology. Among specific topics are the effect of milling time on the production of herbal nanopowders, flow behavior in the resin infusion of a glass-fiber-reinforced polymer wind turbine blade, mechanical properties of chitosan-modified montmorillonite-filled tapioca starch nanocomposite films, fabricating and characterizing ceramic membrane by a gel-cast technique for filtering water, and zero-valent iron supported by nano-clay as an efficient adsorbent material for arsenic.

MECHANICAL ENGINEERING & MACHINERY

TJ181 9781119953456

Handbook of compliant mechanisms.Title main entry. Ed. by Larry L. Howell, Spencer P. Magleby, and Brian M. Olsen. *Wiley*, ©2013 324 p. \$125.00

Compliant mechanisms bend to achieve their purpose. Designers and engineers have compiled this reference to help colleagues and students understand the principles of compliant mechanisms and see examples to they can design their own products. After introductory chapters and sections on modeling and synthesis, they provide a library of compliant mechanisms. The topics include analyzing flexure mechanisms in the intermediate displacement range, using pseudo-rigid body models, synthesis through topology optimization, elements of mechanisms, and example application.

TJ211 9781466580411

Fundamentals in modeling and control of mobile manipulators.

Li, Zhijun and Shuzhi Sam Ge. (Automation and control engineering)

CRC Press, ©2013 279 p. \$129.95

Li (automation science and engineering, South China U. of Technology) and Ge (electrical and computer engineering and social robotics, National University of Singapore and robotics, U. of Electronic Science and Technology of China, Chengdu) offer a theoretical treatment of several fundamental problems for robotic manipulators mounted on mobile bases, platforms, or vehicles, including some issues they themselves have been grappling with for over a decade. They cover kinematics and dynamics, path planning and motion generation, model-based control, adaptive robust hybrid motion/force control, under-actuated control, coordination control, and cooperation control.

TJ930 9781118022672

Stress corrosion cracking of pipelines.

Cheng, Y. Frank. (Wiley series in corrosion)

Wiley, ©2013 257 p. \$125.00

Stress corrosion cracking was first observed in pipelines in the US during the 1960s and in Canada during the 1980s, says Cheng (pipeline engineering, U. of Calgary, Canada), and has proved to be an impediment to the safe operation of pipelines and a motivation for scientists to discover the detailed mechanism behind the process. He summarizes the current state of scientific understanding and relevant engineering practice for scientists, engineers, managers, technologists, students, and others (but apparently not regulators or activists concerned about petroleum spewing in their community). The topics are fundamentals, nearly-neutral-pH and high-pH cracking, acidic soil environments, pipeline welds, high-strength pipeline steels, and managing pipeline stress corrosion cracking.

**ELECTRICAL ENGINEERING,
ELECTRONICS, NUCLEAR ENGINEERING**

TK454 9781118451144

Fundamental elements of applied superconductivity in electrical engineering.

Wang, Yinshun.

Wiley, ©2013 444 p. \$149.95

Wang (alternative electrical power systems with renewable energy sources, North China Electric Power U., Beijing) presents a textbook for graduate or undergraduate students of electrical engineering, and a reference for researchers and practitioners. He introduces the basic theory of superconductivity and material characteristics, circuitry design, and other matters that influence its application. Among the topics are mechanical properties and anisotropy of superconducting materials, alternative current losses, fabricating technologies of practical superconducting materials, cryogenic insulating materials and performances, and the basic structure and principles of superconducting apparatus in a power system.

TK1007 9781439879368

Structure preserving energy functions in power systems; theory and applications.

Padiyar, K. R.

CRC Press, ©2013 358 p. \$149.95

Structure preserving energy functions (SPEF) is an approach to monitoring an electrical grid that is proving more reliable and easier to calculate than the direct methods used in the transient energy function approach. Padiyar (emeritus, electrical engineering, Indian Institute of Science-Bangalore) presents some analytical techniques based on SPEF for identifying problems and correcting them. His topics include direct methods for evaluating the transient stability of systems with simplified models, SPEF for systems with detailed generator and load models, detecting instability based on identifying critical cutsets, sensitivity analysis for dynamic security and prevention control using damping controllers based on a flexible alternating-current transmission system (FACTS), and applying FACTS controllers for emergency control.

TK5103 9781848214446

Energy efficiency in wireless networks.

Jumira, Oswald and Serali Zeadally. (Focus series in networks and telecommunications)

ISTE/Wiley, ©2013 104 p. \$70.00

A telecommunications engineering researcher in Cape Town, Jumira and Zeadally (computer science and information technology, U. of the District of Columbia) survey the current energy-efficient methods, designs, and implementations that are being used in various types of wireless networks. They cover energy efficiency in cellular networks, wireless *ad hoc* networks, and wireless local area networks; energy harvesting in wireless sensor networks; and future challenges and opportunities. The main goal is to provide a reference for researchers, students, regulatory authorities, and educators, they say, but the material could also serve as an introduction to the field for readers with an engineering background.

TK5103 9781466636521

Intelligent systems for optical networks design; advancing techniques.

Title main entry. Ed. by Yousef S. Kavian and Z. Ghassemlooy.

Information Science Reference, ©2013 309 p. \$195.00

Many of them from Brazil, electrical engineers and related professionals explore theoretical and practical aspects of intelligent methodologies and algorithms used for planning and designing optical networks. Among the topics are optical network optimization, monitoring devices for providing network intelligence in optical packet switched networks, energy efficient optical transport networks with mixed regenerator placement, topological design genetic algorithms, wavelength and routing assignment in all-optical networks using ant colony optimization, and Hopfield neural networks for routing in communication networks.

TK5103 9781466567801

Optical coding theory with prime.

Kwong, Wing C. and Guu-Chang Yang.

CRC Press, ©2013 355 p. \$159.95

Kwong (Hofstra U.) and Yang (National Chung Hsing U.) explain the construction, properties, and performance of 1-D synchronous prime codes, 2-D synchronous carrier-hopping prime codes, and multilength prime codes with low periodic cross-correlation functions.

Examples compare Gaussian, soft-limiting, and hard-limiting code performance under a chip-synchronous assumption, and combine optical time-division multiple access with synchronous optical code-division multiple access in the same synchronous network. The opening chapters review Galois fields, matrix theory, Gaussian approximation, combinatorial analysis for unipolar codes, and the coding techniques and enabling hardware technologies of seven optical coding schemes.

TK5105 9781466518186

Advanced location-based technologies and services.

Title main entry. Ed. by Hassan A. Karimi.

CRC Press, ©2013 310 p. \$129.95

Now that so many people can be located at any time through their telephone, services that exploit this information are emerging. Here contributors identified only by name look at techniques and technologies, new trends, and services. Among their topics are positioning and tracking approaches and technologies, modeling and computational concerns for multimodal route planning, geo-crowdsourcing, generating a pedestrian path through GPS traces, multisensor map matching for pedestrian and wheelchair navigation, and the open geospatial consortium and location service standards.

TK5105 9781466628274

Cases on open-linked data and semantic web applications.

Title main entry. Ed. by Patricia Ordonez de Pablos, Miltiadis D. Lytras, Robert Tennyson and Jose Emilio Labra Gayo.

Information Science Reference, ©2013 288 p. \$175.00

The open-linked data and semantic web approaches to information systems and ontology-based information systems are addressed by researchers in computer and information sciences, along with various underlying database and knowledge representation aspects that impact personalization and customization. Among the topics are enhancing access to public procurement notices by promoting product scheme classifications to the linked open data initiative, extracting and predicting a biomedical database identifier using neural networks towards data network construction, the role of vocabularies for semantic interoperability in enabling linked open data

publishing, a semantic framework for tourist information systems, and publishing statistical data following the linked open data principles.

TK5105 9781118122389

Wireless networking; understanding internetworking challenges.

Burbank, Jack L. and Julia Andrusenko, Jared S. Everett, William T.M. Kasch.

IEEE/Wiley, ©2013 666 p. \$135.00

A team of communications engineers at Johns Hopkins University provides an overview of the entire wireless networking landscape that is comprehensive in breadth and as deep as will fit in 666 pages. The goal is to provide a quick reference, a reminder, and a guide to more detailed accounts of particular aspects. Among the topics are the wireless ecosystem, wireless personal area networks, wireless metropolitan area networks second-to-fourth-generation cellular communications, mobile internetworking, and building the wireless internet.

TK6575 9781608076611

Signal processing in noise waveform radar.

Kulpa, Krzysztof. (Artech House radar series)

Artech House, ©2013 255 p. \$162.00

Noise or pseudo-noise radar can identify the otherwise unknown range and velocity of a target, explains Kulpa (Warsaw U. of Technology), but requires much more signal processing than other forms of radar. He presents the basic idea of noise radar and details of signal processing to readers who have a basic knowledge of signal processing and general radar technology. The topics are radar principles, noise radar, masking effects, multistatic noise radar, noise synthetic aperture radar, the passive detection of moving targets, and examples of noise radars.

TK6592 9781466510517

Multi-antenna synthetic aperture radar.

Wang, Wen-Qin.

CRC Press, ©2013 438 p. \$149.95

Wang (communication and information engineering, U. of Electronic Science and Technology of China, Chengdu) describes multi-antenna synthetic aperture radar (SAR) in microwave remote sensing applications such as high-resolution imaging, wide-swath remote sensing, and ground moving target indication. He pays special attention to signal processing aspects. Among his topics are azimuth multi-antenna SAR, elevation-plane

multi-antenna SAR, multiple-input-multiple-output (MIMO) SAR waveform diversity and design, distributed multi-antenna SAR time and phase synchronization, azimuth-variant multi-antenna SAR image formulation processing, and multi-antenna SAR three-dimensional imaging.

TK7872 9783527328833

Supercapacitors; materials, systems, and applications.

Title main entry. Ed. by Francois Beguin and Elzbieta Frackowiak. (New materials for sustainable energy and development) *Wiley-VCH*, ©2013 539 p. \$200.00 Chemists, physicists, and materials scientists explain how electrochemical capacitors can play a part in energy management because they can store much more energy than traditional dielectric capacitors and charge much faster than batteries. Among the topics are general properties of electrochemical capacitors, modern theories of carbon-based electrochemical capacitors, lithium-ion-based hybrid supercapacitors in an organic medium, testing, reliability, and market and applications. The material is for fellow scientists and engineers who are interested in designing and improving the devices.

TK7874 9789814327909

Semiconductor spintronics.

Xia, Jianbai and Weikun Ge, Kai Chang.

World Scientific, ©2012 533 p. \$160.00

Xia, Chang (both Chinese Academy of Sciences), and Ge (Tsinghua U. and Sun Yat-Sen U.) introduce the developing field of semiconductor spintronics to graduate and advanced undergraduate students, instructors, and researchers. They consider such aspects as properties of magnetic ions in semiconductors, the injection of spin-polarized electrons, spin relaxation, optical responses of electron spins in semiconductors, spin-polarized electron and domain wall transport, and future quantum dot and quantum wire spintronics.

TK7875 9783527319039

System-level modeling of MEMS.

Title main entry. Ed. by Tamara Bechtold, Gabriele Schrag and Lihong Feng.

Wiley-VCH, ©2013 529 p. \$210.00

Structural engineers and other specialists provide a broad overview of the state of the art in the system-level modeling of

micro-electro-mechanical systems (MEMS), with a special emphasis on the theoretical fundamentals of compact modeling, applying different approaches to specific problem classes, and methodologies that are already available on commercial software. They cover physical and mathematical fundamentals, the lumped element modeling method, mathematical model order reduction, modeling entire systems, and software implementations. Among the topics are algorithm approaches for a system-level simulation of MEMS and aspects of co-simulation, a mixed-level approach for modeling distributed effects in microsystems, projection-based nonlinear model order reduction, applying reduced order models in the circuit-level design of radio frequency MEMS devices, and model order reduction implementations in a commercial MEMS design environment.

TK7895 9781466639225

Embedded computing systems; applications, optimization, and advanced design.

Title main entry. Ed. by Mohamed Khalgui, Olfa Mosbahi and Antonio Valentini. *Information Science Reference*, ©2013 532 p. \$195.00

The 23 papers in this collection share recent developments in reconfigurable intelligent embedded control systems, discussing formal modeling and verification, scheduling, execution models, optimal implementations, and feasible simulations of future reconfigurable intelligent centralized/distributed adaptive architectures. The opening chapter models short-term scheduling of crude oil refinery operations as a two-level control architecture in a hybrid Petri net. An international team of researchers proposes an architecture description language for automotive software-intensive systems called EAST-ADL. Other topics include flash-based storage, OCL constraint validation with graphs, reusable specification patterns, and industrial wireless sensor networks.

TK8304 9781439836101

Handbook of silicon photonics.

Title main entry. Ed. by Laurent Vivien and Lorenzo Pavesi. (Series in optics and optoelectronics) *CRC Press*, ©2013 835 p. \$169.95
Researchers from computer and electrical engineering, chemistry and materials science, and information and communication

technologies present a thorough reference to using silicon as an optical material. The topics include guided light in silicon-based materials, off-chip coupling, nonlinear optics in silicon, long-wavelength photonic circuits, silicon-based light sources, hybrid and heterogeneous photonic integration, fabricating silicon photonic devices, silicon photonics for biology, and silicon-based photovoltaics.

CHEMICAL TECHNOLOGY

TP691 9782710809920

Gas chromatography and 2D-gas chromatography for petroleum industry; the race for selectivity.

Bertoncini, Fabrice and Marion Courtiade-Tholance, Didier Thiébaud. Trans. by Trevor Jones.

Editions Technip, ©2013 340 p. \$72.00 (pa)
The technology is used to elucidate complex samples substantially better than conventional gas chromatography can achieve. Contributors from petroleum and other energy companies survey how it is used in their field. Among the topics are challenges and future needs for the molecular analysis of petroleum products, two-dimensional gas chromatography as a disruptive technique, data processing, coupled systems, the detailed analysis of hydrocarbons, calculating properties from chromatographic data, the speciation of heteroelements, and simulating distillation. Distributed in the US by Atlas Books.

MILITARY & NAVAL SCIENCE

U163 9781608077052

Information warfare and electronic warfare systems.

Poisel, Richard A.

Artech House, ©2013 414 p. \$129.00
Information and electromagnetic warfare are an ever increasing part of modern military operations. Poisel, with a doctorate in electrical and computer engineering, offers a highly technical reference on the topic that is intended primarily for people with at least a bachelor's degree in engineering and knowledge of linear systems theory (matrix operations). For those who may not have much knowledge of information or probability theory there is a chapter where the necessary aspects are discussed. A detailed model of information warfare also gets a whole chapter. The author divides the topic into three domains: cognitive, information, and

physical. These concern, respectively, the human process of decision making based on information gathered on the battlefield, the uses of information theory in conducting operations, and the physical aspects of the information infrastructure such as antennas, cables and electromagnetic means of denying enemy use of information. There is an extensive list of abbreviations towards the back.

UF503 9780313396137

Emerging military technologies; a guide to the issues.

Wong, Wilson W. S. (Contemporary military, strategic, and security issues)
Praeger, ©2013 232 p. \$52.00
 Wong (research fellow with the Centre for Defense and Securities Studies, University of Manitoba, Winnipeg, Canada) has created this highly technical and valuable resource for members of the military and intelligence communities, which is also accessible to general readers. This book has six chapters: Introduction; Ubiquitous Space Access; Directed Energy Weapons; Computer Autonomy; Nanotechnology; and Biotechnology. The appendix has four parts: Small Satellites; Military Space Planes; competition to Direct Energy Weapons; and Electromagnetic Railguns. The book also has a useful, three-page list of acronyms.

PUBLISHING, LIBRARY SCIENCE, BIBLIOGRAPHY

Z286 9781107020856

The handbook of journal publishing.

Morris, Sally, Ed Barnas, Douglas LaFrenier and Margaret Reich.
Cambridge U. Press, ©2013 467 p. \$95.00
 Encompassing the entire publishing process for both online and print journal publishing, this handbook will be useful to new publishers and those branching out into new territory, as well as librarians and those who submit to journals. After a chapter devoted to managing journals, the book covers editing, production, metrics, marketing and sales, fulfillment, finances, subsidiary and contract income, copyright and other legal aspects, and ethical issues. The final chapter looks ahead to the future of scholarly communication. The book features abundant checklists and sample documents, along with a list of organizations, journals, magazines, newsletters, blogs, and websites. The list of vendors gives contacts

for everything from document delivery suppliers to citation management systems, hosting platforms, and abstracting and indexing services. The authors are veteran professionals in the journal and academic publishing industry.

Z669 9789814350297

New trends in qualitative and quantitative methods in libraries; select papers.

International Conference on Qualitative and Quantitative Methods in Libraries (2nd: 2010: Chania, Crete, Greece) Ed. by Anthi Katsirikou and Christos Skiadas.
World Scientific, ©2012 455 p. \$160.00
 The 55 selected papers explore using the two approaches in research to investigate various aspects of libraries. They cover views from the academic library reference desk on assessing and evaluating reference, library marketing and management, digital library education and research, library and information science post-graduate student research, users and their behaviors, academic libraries, digital libraries, library applications and methodologies, and information and learning. Authors and titles are indexed, but not subjects.

Engineering Division Officers and Board 2013

Chair

Penny Simpson
Wiss Janney Elstner Assoc Inc
330 Pfingsten Rd
Northbrook, IL 60062
psimpson@wje.com

Treasurer

Mary Whittaker
Boeing Co
PO Box 3707
MC 62-LC
Seattle, WA 98124-2207
mary.s.whittaker@boeing.com

Awards Chair

Diane Brenes
The Boeing Company
Huntington Beach, CA 92647
diane.f.brenes@boeing.com

Archivist and Mentoring

Bonnie Osif
Pennsylvania State University
325 Hammond Bldg,
University Park, PA 16802
bao2@psu.edu

Chair-Elect

Andrew Shimp
Yale University Libraries
15 Prospect Street
New Haven, CT 06520-8284
andrew.shimp@yale.edu

Secretary

Giovanna Badia
McGill University Libraries
6349 Val-marie
Saint-leonard, QC H1P1C9
Canada
giovanna.badia@mcgill.ca

Membership

G. Lynn Berard
Carnegie Mellon University
Libraries
4402 Wean Hall
Pittsburgh, PA 15213-3890
lberard@andrew.cmu.edu

Fundraising

Patricia Aspinwall
aspinwall@rogers.com

Web Master

Dale Copps
Create Inc
16 Great Hollow Road
Hanover, NH 03755
dgc@create.com

Past Chair

Pamela Enrici
Univ of MN Duluth
416 Library Dr
Duluth, MN 55812
penrici@d.umn.edu

Conference Program Planner

Betty Edwards
Draper Lab
555 Technology Square
Cambridge MA 02139
bedwards@draper.com

Conference Program Planner

Beth Thomsett-Scott
University of North Texas
Libraries
3940 North Elm Street
Denton, TX 76207
bethts007@gmail.com

Discussion List Admin

Amber Collins
Technical Information Center
139 Barnes Dr., Ste 2
Tyndall AFB, FL 32403-5323
amber.collins@us.af.mil

Aerospace Section

Chair

Mary Strife
West Virginia University
PO Box 6105
Morgantown, WV 26506-6105
mary.strife@mail.wvu.edu

Chair-Elect

Edna Paulson
ewp1128@gmail.com

Past Chair

Barbara Williams
Aeronautics and Astronautics
Librarian
Massachusetts Institute of
Technology
77 Massachusetts Ave. #10-500
Cambridge, MA 02139
barbaraw@mit.edu

2013 SLA Chemistry Division Executive Board

Chair

Susan Makar
NIST
100 Bureau Dr
Gaithersburg, MD 20899
301-975-3054
susan.makar@nist.gov

Chair-Elect

Valerie Tucci
College of New Jersey Library
2000 Pennington Road
Ewing, NJ 08628
vtucci@tcnj.edu

Past-Chair / Nominating Committee Chair

Marie Fraties-Block
BASF Corp
734-324-6204
marie.fraties-block@basf.com

Secretary

Lee Pedersen
Brown University
401-863-3807
lapedersen@brown.edu

Treasurer

Yan He
Georgetown University
202-687-2573
yh83@georgetown.edu

2013 SLA Chemistry Division Advisory Board

ACS Liaison

Norah Xiao
Univ of Southern California
norah_xiao@yahoo.com

ASIST Liaison

Christina K. Pikas
Johns Hopkins University
christina.pikas@jhuapl.edu

Archivist

Luray Minkiewicz
E I DuPont De Nemours Co.
Experimental Station
luray.m.minkiewicz@usa.dupont.com

Membership

Mindy Peters
Carpenter Technology Corporation
P.O. Box 14662
Reading, PA 19612-4662
mpeters@cartech.com

Awards

Claire Stokes
3M Company
Building 201-2C-12
Saint Paul, MN 55144
USA
cstokes@mmm.com

List Owner

Judith Currano
University of Pennsylvania Libraries
3301 Spruce Street
Philadelphia, PA 19104-6323
currano@pobox.upenn.edu

MRM Section Chair

Meghan Gamsby
Duke University Libraries
Box 90175
Durham, NC 27708
USA
meghan.gamsby@duke.edu

MRM Section Past-Chair

Norah Xiao
Univ of Southern California
norah_xiao@yahoo.com

Mentoring

Denise Callihan
PPG Industries Inc.
callihan@ppg.com

Bulletin Editor

Kiem Ta
Oklahoma State University
405-744-9743
kiem.ta@okstate.edu

Professional Development

Ted Baldwin
University of Cincinnati
513-556-4211
baldwitw@ucmail.uc.edu

Sponsorship

William Armstrong
Louisiana State University Libraries
Room 5, Middleton Library
Baton Rouge, LA 70803-0001
notwwa@lsu.edu

Strategic Planning

Linda Shackle
Arizona State Univ
480-965-7609
linda.shackle@asu.edu

Program Planner

Lutishoor Salisbury
University of Arkansas Libraries
365n McIlroy Avenue
Fayetteville, AR 72701-4002
lsalisbu@uark.edu

Webmaster

Linda Maddux
Reed College
lbm@reed.edu

2013 Science and Technology Division Officers and Committee Chairs Executive Board

Chair

Helen Josephine
helenj@stanford.edu

Chair-Elect

Nevenka Zdravkovska
nevenka@umd.edu

Past-Chair

Cheryl Hansen
cahansen@esi-il.com

Secretary

Margaret Smith
margaret.smith@nyu.edu

Treasurer

Thea Allen
theaallen@gmail.com

2013 Science and Technology Division Advisory Board

Archivist

Roger E. Beckman
BeckmanR@indiana.edu

e-Discussion Listserv Manager

Rebecca Pernell
pernell@stanford.edu

Parliamentarian

Jeffrey Bond
Texas Christian University
j.bond@tcu.edu

Awards Committee Chair

Sheila Rosenthal
SLR@sei.cmu.edu

Governing Documents Committee Chair

Cheryl Hansen
cahansen@esi-il.com

Public Relations Committee Chair

Bill Jacobs
billjac@miami.edu

Awards Committee Members

Kathy Nordhaus
Susan Smith
Pradna Yogesh
Eleanor MacLean
Bing Wang
Debal Kar
P.K. Jain
Cindy Xiang
Susan Powell
Gillian Ralph
Jeanette Regan

Government Relations Committee Chair

Karen Buxton
Karen.Buxton@pnl.gov

Public Relations Committee Members

Thea Allen
Portia McQueen

International Relations Committee Chair

Nevenka Zdravkovska
nevenka@umd.edu

Professional Development Committee Chair

OPEN

Communications Committee Chair

Rebecca Pernell
pernell@stanford.edu

Membership Committee Chair

Sarah Oelker
soelker@mtholyoke.edu

Professional Development Committee Members

Lorraine Pellack
Stephanie Publicker

Communications Committee Members

Abby Bedford (STN Editor)
Margaret Smith (Webmaster)

Membership Committee Members

Emily MacKenzie
Sara M. Samuel

Strategic Planning Committee Chair

Sue Brewsaugh
sue.brewsaugh@boeing.com

Conference Program 2013 Planner

Helen Josephine
helenj@stanford.edu

Nominating Committee Chair

Hilary Davis
hilary_davis@ncsu.edu

Strategic Planning Committee Members

Dorothy McGarry
Helen Kula
Vici Deem
Rebecca Kuglitsch
Christy Peters
Hilary Davis
Ann Koopman
Joe Kraus
Bonnie Osif
Marilyn Caporizzo
Patricia Pereira-Pujol
Wilda Bowers Newman
Cheryl Hansen
Samantha Ruimy
Elisabeta Cosarca

Conference Program 2014 Planner

Nevenka Zdravkovska
nevenka@umd.edu

Nominating Committee Members

Pam Enrici
Nancy Wilmes
Christine Whitaker
Anna Ren

2013 Science and Technology Division Advisory Board (cont'd)

Student Relations Committee Chair

Thea Allen
theaallen@gmail.com

Student Relations Committee Members

Michele Hadburg
Rebecca Miller
Sarah Oekler
Susan Powell

Vendor Relations Chair OPEN

Vendor Relations Committee Members

Anna Ren
Nevenka Zdravkovska

Web Master

Margaret Smith
margaret.smith@nyu.edu

2013 Science and Technology Division Liaisons

ALA/ACRL Science & Technology Section Liaison

Louise Deis
lfdeis@princeton.edu

SLA Cataloging Committee Liaison

Thea Allen
theaallen@gmail.com

SLA Ethics Ambassador

Anna Ren
annawu@northwestern.edu

Medical Library Association Liaison

Carol Vreeland
carol_vreeland@ncsu.edu

SLA Diversity Leadership Committee Liaison

P.K. Jain
pkjain1310@gmail.com

SLA Alignment Ambassador

OPEN

SciTech News

Editor

Abby Bedford
432 Fountain NE #5
Grand Rapids, MI 49503
abby.e.bedford@gmail.com

Advertising Manager

OPEN

Business Manager

Nevenka Zdravkovska
University of Maryland
1403J Mathematics Bldg
College Park, MD 20742-7011
Phone: 301-405-9144
Fax: 301-405-9164
nevenka@umd.edu

SLA on the Web: *SciTech News* Division Websites

Chemistry Division

Home Page: <http://chemistry.sla.org>

Discussion List Instructions:

Send an e-mail to: Lyris@lists.sla.org. In the body of the message: Subscribe sla-dche <your e-mail address> <FirstName> <LastName>

Chemistry Division - MRM Section

Home Page: <http://chemistry.sla.org/mrm>

Discussion List Instructions:

Send an e-mail to: Lyris@lists.sla.org. In the body of the message write only: Subscribe SLA-DMRM <your e-mail address> <FirstName> <LastName>

Engineering Division

Home Page: <http://engineering.sla.org>

Discussion List Instructions:

Send a message to lyris@sla.lyris.net in the following format: Leave the Subject line blank. In the body, type: Subscribe SLA-DENG your-e-mail_address "FirstName LastName" (e.g. Subscribe SLA-DENG johndoe@gmail.com "John Doe")

Engineering Division - Aerospace Section

Discussion List Instructions:

Send an e-mail to: Listserv@sti.nasa.gov. Leave the subject line empty. In the body of the message write only: Subscribe SLA-AERO Your_Name

Science-Technology Division

Home Page: <http://scitech.sla.org>

Discussion List Instructions:

Send an e-mail to: lyris@sla.lyris.net. In the body of the message: Subscribe sla-dst <your e-mail address> <FirstName> <LastName>

SCITECH NEWS
ABBY BEDFORD
432 FOUNTAIN NE #5
GRAND RAPIDS, MI 49503